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THE RESPONSIBILITIES OF MEDICINE IN WARTIME

PRESIDENT'S ADDRESS

FRED W. RANKIN, M.D.

LEXINGTON, KY.

It is now a quarter of a century since the American Medical Association met during wartime to install a President. In 1917 its annual session was held in New York, two months after the opening of World War I. Again we find ourselves involved in a global conflict the magnitude and implications of which are unpredictable and the ferocity, savagery and barbarity of its technic, in comparison with wars of the past, unbelievable.

Since the armistice of 1918 the world has moved in a fluid cycle. Obvious currents of universal unrest and revolution have continued to accelerate their tempo to the final culmination in strife which is shaking the planet with furious frenzy. When European democracy and totalitarianism joined battle in September 1939, following the brutal subjugation of numerous small individual nations, with ruthless sacrifice of life and unbelievable destruction of property, it was evident to many that this revolutionary tide would sooner or later sweep us into its embrace. We applauded the gallant Anglo-Saxon spirit of the heroes of Dunkirk and the British Isles and aided their cause with monies and matériel, as we surely and inexorably approached active participation in the maelstrom of war. Throughout this period the vast majority of our citizens, with clear vision and resolution, followed enthusiastically all steps in the assistance of the allied defenders of freedom. They clearly envisioned that America could not live apart and that the destinies of the two hemispheres were inextricably intertwined.

Came Dec. 7, 1941, and in the dawn of that Sunday morning a treacherous, characteristically foul attack on our defenses in the Pacific hurled this nation into an unsought war, which now engages our full effort. Unbelievable as this episode was, unthinkable to civilized man as it is that any enemy, without warning, should precipitate such an attack, the bitter losses of that battle, the bloodshed and wounds inflicted on our gallant forces at Pearl Harbor, were a worthy sacrifice in the cause of national unity. It is difficult to believe that the firm, unyielding unity which now is ours could have come so quickly, even after such an episode of infamy. Factionalism was forgotten, groups abandoned their hostile antipathy to one another, self-seeking units of our population laid down their quarrels, and one hundred and thirty million people became true Americans within the hour. Today, at long last, the issue is joined and our position is clear. The inescapable struggle of our generation has begun; the ultimate test between the powers of a free world and a slave world is at hand; appeasement has failed, since it could only postpone the inevitable. Our test in the defense of democracy is beginning.

As one passes in review world events, it is clear that ideological casualties have been numerous and that processes of expediency, now as always, have dictated strange alliances. This is a war of unpredictable mutations and unprecedented paradoxes from which have arisen the strangest ironies of contemporary history. This war no longer masquerades under the guise of a struggle between ideologies; its hideous face has been unmasked as a conflict to destroy western civilization and gain world domination.

Our task both now and in the days and weeks to come, as each succeeding phase of the conflict develops, is a staggering one. Production of matériel, mobilization of manpower, the direction of war strategy and the administration of the vast economic problems which confront us are in the capable hands of our national leaders. To them the medical profession offers its all. Our part is the mobilization and utilization of all our facilities in the most efficient and helpful manner to the end that this struggle may be terminated successfully.

MEDICAL MOBILIZATION

The mobilization of the medical profession actually began in June 1940, when the Surgeon General of the Army, with wise forethought and understanding of the situation, sought cooperation from the American Medical Association at its meeting in New York. Immediately thereafter work was begun on a plan, and the entire personnel of the medical profession has been mobilized and classified to implement the forces of the government in waging this war.

The initial step in this enterprise was the circularization by the medical profession itself of its entire personnel to determine the willingness of each individual to serve, his personal estimate of his own physical condition, and his professional capability. A second evaluation of every physician of the United States was carried out by fact-finding committees of his colleagues to arrive at a definite estimate of his professional capability in the eyes of his peers, as measured by experience and training. The result of these efforts was the accumulation of an enormous amount of data which were available to the medical departments of the armed forces and which would permit them to employ men in their proper numbers and in their proper professional niches under wartime conditions, thus avoiding much of the confusion, irritation and error which are inevitable under conditions of rapid expansion and mobilization.

President's address before the American Medical Association at the Ninety-Third Annual Session, Atlantic City, N. J., June 9, 1942.

A selective service act was enacted which, with its subsequent modification requiring the registration of all male citizens of the United States between the ages of 18 and 64, was of particular importance to the medical profession, affecting as it did all elements from premedical students to veteran practitioners. It was immediately recognized by all the authorities that the production of physicians up to the present output of the medical schools must be maintained. Consequently provisions were made to secure deferment of premedical students, medical students and first year interns under properly recognized conditions. These conditions assured the admission of graduates of all approved medical schools, who could pass the physical examinations, into the service of the armed forces after the internship year had elapsed.

The sympathetic understanding and farsightedness of the selective service officials, from the heads of the service down through the local draft boards, have been of inestimable advantage in handling these particular problems of medical men. It is one of the foundations on which the future successful distribution of professional services is based.

During the period of training there was but slight dislocation of the profession from its civil duties because of the availability of medical reserve corps officers, volunteers and men within the draft age limits of 21 to 36 years. With the opening of hostilities the immediate demand for large numbers of medical men necessitated another rapid expansion of the available professional forces, and with the elevation of the selective service age to a maximum of 45 years for combat duty it became immediately apparent that additional organizational steps were indicated. In consequence the Procurement and Assignment Service, under the Office of Defense Health and Welfare Services, was formed. This agency, representing the medical, dental and veterinary professions, is functioning to meet the immediate demands of the Army and Navy for additional men and to provide for future needs as the combat forces increase their personnel.

The additional circularizations by this agency have resulted in medical men volunteering for service in a capacity in which they themselves deem their services most useful. By the transference of these data from the roster of the American Medical Association's office in Chicago (a duplicate of which is kept in Washington) to a punch card system, the agency has been able to function wisely and effectively. The fact should be emphasized that there are available in this country only some one hundred and fifty to one hundred and sixty thousand practicing physicians of all ages, sex, color, creeds and physical states. It is reasonable to expect that, as the Army increases, more and more of the arduous military duties will fall on physicians in the lower age groups. The medical reserve corps has been exhausted. The entire personnel of the medical profession may be distributed efficiently through the Procurement and Assignment Service to meet military and civilian needs.

A greater and greater strain will undoubtedly be placed on medical resources in this country. There is no question that the demands on us will become greater, and unavoidably so in the ensuing months. Indeed, it is calculated that approximately twenty-five thousand physicians will be serving with the colors by the end of 1942.

The task of handling medical mobilization has been given to the medical profession by the Chief Executive. The job is ours. The complex and searching problems associated with its execution are our responsibilities. That these problems have been met courageously and with a minimum amount of confusion to the present time may not be gainsaid, nor is it too much to predict that the medical profession will continue its patriotic service in a manner consonant with its performances in the past under emergency conditions.

MEDICAL EDUCATION

The needs of both the military and the civilian population for adequate medical care emphasize the danger of reduction of either the present day standards of medical practice or the number of physicians. At present approximately five thousand physicians are graduating yearly from the seventy-six accredited medical schools of the country. When one considers, however, that the loss due to death, retirement and other causes is approximately three thousand a year, it becomes apparent that it is impossible to build a reserve pool of any size in a short period.

The standards of medical education in this country today undoubtedly are superior to those found in any other country in the world. Our public has available to it a quality of medical service elsewhere unsurpassed. One of the main problems in medical care is and has been for many years a distribution of talent, for admittedly the concentration of physicians in urban areas has been too great, whereas the dilution among rural populations has been a major and perplexing affair. However, this question of distribution of more physicians and of maintaining present medical standards is one which we can hardly expect to be satisfactorily solved during the present period. The method of production of more physicians and of maintaining present medical standards is one which demands untiring scrutiny and should not be decided in a hurried manner under pressure of emergency.

POSTGRADUATE EDUCATION

Postgraduate education, as it is carried out at present, must inevitably suffer from wartime circumstances. Continuing education as it is applied to general practitioners and specialists differs materially because of the very nature of the essential instruction. The education of a specialist has been largely influenced by the widespread adoption of the residency system of training. Within the past three decades this system of apprentice teaching in the wards, plus a long term service in the hospital after graduation, has spread to most parts of the country. It is definitely recognized, although somewhat belatedly in hospitals in many larger cities, that residencies are the most useful method of teaching young men surgical diagnosis, surgical judgment and handicraftsmanship under controlled conditions. The length of time devoted to specialized training in the various fields naturally differs but, measured by whatever yardstick one may use, ranges from three years upward, following a year's rotating internship.

That this type of training successfully answers the professional requirements of all specialized groups is beyond cavil; that it is practicable in wartime and under the stress of emergency is distinctly debatable. Younger physicians who have just completed or are in the process of completing a relatively long term of specialized instructions obviously comprise the group which can furnish most useful professional services in specialized fields to the armed forces, for the tempo of modern warfare is so exhausting even to those of superb physi-

cal stamina that it is the policy of the War Department to utilize younger officers with troops if they can be found available. Because of these circumstances in which men in residencies and entering the age group for residencies find themselves, it is distinctly probable that much dislocation will be inevitable in postgraduate instruction in specialized fields. Nevertheless, the principles of continuing education along specialized lines must be recognized and adhered to with whatever flexibility allows its most advantageous adjustment in the mosaic of wartime medical education.

It is worth while to note here that an opportunity to continue their professional apprenticeship will be given, wherever possible, to those men who are in the midst of their specialty training and have been called into service. Some of the specialty boards have already agreed to apply the time spent in acceptable army hospitals on the training time required by that board. Only a small number of men can enjoy this privilege because of the exigencies of the times, but the principle of postgraduate education is so fundamental that it must be maintained in wartime in every available institution.

Basic principles in medical education must not be jettisoned; they may be held in abeyance, but the enormous damage which becomes unavoidable in the wake of war may be mitigated by every endeavor to maintain as high a level of both practice and education as is humanly possible.

RESEARCH

Research is a part of a planned postgraduate medical education, which languishes under the exigencies of catastrophe. To date the effect of the present day war on research has been to direct its attention mostly in channels of military medicine, and from these efforts unquestionably many advantageous developments in special research regarding useful drugs and other substances in the treatment of wounds, shock, infections and burns have resulted. The inevitable letdown in experimental investigation in postgraduate medical education may properly be bridged over but feebly during this period, yet a comprehensive view of the situation suggests that all efforts at maintenance of as many opportunities for scientific research as possible, within the emergency program, are necessary.

It happens that not infrequently science is exposed to programs and tendencies which, because of political considerations, may justifiably be viewed with little enthusiasm and often with forebodings. Obviously, scientific bodies must remain independent; their work should never be influenced by either political expediency or legislation. While it is easy to argue the thesis that such organizations remain within the framework of government, of necessity the hazards of governmental subsidization must ever be kept in mind because of "the danger that he who pays the piper may call the tune and that research may be required to be devoted primarily to objects which the politician, or the civil servant, regard for the moment as of national importance."

Research is a part of scientific development which no longer need be carried on in the sabbatical solitude of a laboratory but may be indulged in by all who wish. Every clinician, every practicing physician, is a research worker in a true and practical sense. Observation of symptoms, observation and recording of the action of therapeutic agents as applied to disease, and the correlation of clinical data are obviously of comparable importance in the general scheme of application of medical knowledge. We clinical men of medicine must recognize the necessity of a proper balance between scientific research and clinical investigation and remember the urgent necessity of this dual approach to all problems of healing the sick. Tolerance should temper the interchange of views between the group of academic teachers habituated to investigation and that part of our profession inclined solely to clinical practice.

TRENDS IN MEDICAL PRACTICE

Among the interesting developments of the first questionnaire which was sent out to the medical profession was the surprising fact that only 41 per cent of the physicians classified themselves as general practitioners. Of the remainder, 25 per cent were classified as full time specialists and 34 per cent as part time specialists, the latter group indicating that they paid particular attention to some special line of work while at the same time carrying on a general practice. Thus it becomes apparent that approximately one medical man in three is devoting his entire time to a specialty. That these specialists are of varying degrees of proficiency and training is beside the point, for their numbers indicate definitely a trend in the practice of medicine which is apparently most satisfactory to both the public and the profession, and therefore the number of specialists is likely to increase rather than otherwise. Such a trend has been quite apparent to the most casual observer over the last two decades, and the profession itself, as is its wont, has taken steps to evaluate the capabilities of specialists through the establishment of authoritative examining bodies in fifteen special fields.

This development of specialty boards is a milestone on the road of medical progress which represents self-imposed restrictions and standards of training on physicians who elect to practice in limited fields. It is a part of the scientific discipline of medical men which began in the nineteenth century and has been maintained until today. These boards are like licensing boards, which were established primarily for the protection of the public except that they interest themselves only in standards of training, ethics and proficiency. They do not seek to interfere with any freedom of action of medical schools or licensing bodies or hospitals, and certainly their usefulness would be decidedly impaired should they undertake to arrogate to themselves such prerogatives. It should be emphasized here and now that these boards were formed by groups of specialists with the approval and consent of the Council on Medical Education and Hospitals of the American Medical Association and the Advisory Board of Medical Specialties. In no sense was pressure applied in their birth, and operation under the auspices of national authoritative bodies has been one of their basic principles. That they were formed in the spirit of idealism and that the members of the boards have performed a monumental service which has demanded sacrifice of huge amounts of effort and time from their various other duties is, I think, worth pointing out. As a member of one of these original boards, I can testify to the conscientious fairness and undeviating sense of duty with which each candidate, not only for certification by examination, but in the Founders' Group, has been scrutinized. It is with considerable pride that I assure you that in no instance as far as the Board of Surgery, with which I am most familiar, is concerned, has any decision been arrived at save on merit.

That there are two dangers from which specialty boards are not entirely free must be admitted: first, that there be too many specialty boards and, second, that the boards, because of their very independence, make certain decisions affecting medical education or hospital staffs which could be adjudged either as arrogant or dogmatic and therefore harmful.

Relative to the number of boards, it may be pointed out that the Board of Internal Medicine, for example, has appointed a Committee on Medical Specialties in the fields of allergy, cardiovascular disease, gastroenterology and tuberculosis. Each candidate in these specialties must first pass the general examination of the parent board, and members of the board of examiners will sit in with the subspecialties in evaluating all candidates. This seems a wise provision if subspecialties are to be recognized by special certification, since it presupposes that the candidate is adjudged a competent physician in general internal medicine before he undertakes a more confined field of specialization. Too many boards for minor specialties can add confusion and destroy much of the usefulness of the general plan, but, as long as parent boards supervise examinations and give certificates only after the basic requirements of a major specialty have been satisfied, there is small likelihood of this development occurring.

Enthusiasm for service should continue to be one of the outstanding characteristics of specialty boards, but this enthusiasm should be tempered with common sense, practicality and freedom from any savor of applying pressure. That their programs must be flexible enough to meet changing demands is a truism, and that their decisions must be of an elastic form albeit tempered with resolution and foresight is essential to their continued usefulness. These boards have performed a service to the profession and the public by identifying the well trained and competent specialists, and for this accomplishment they deserve tolerant cooperation, thoughtful scrutiny and helpful constructive criticism.

OUR OBJECTIVES AND OBLIGATIONS

Our nation has now passed from a stage of prebelligerancy into a phase of mobilization and active participation in warfare. We have emerged from a stage of preliminary training to take station in battle lines. Our forces are already fighting on many battle fronts and in foreign seas. War is now our principal business; all national efforts are ancillary to its successful termination in a permanent peace by decisive victory. In this struggle the entire nation is mobilized and, as an integral part of its citizenry, the medical profession cheerfully and enthusiastically offers its all. Our profession is the trustee of the nation's health, and as such its obligations are to furnish adequate medical care to the armed forces while at the same time maintaining faithful service to the civilian population and productive war industry installations. It further demands that public health programs be cheerfully guarded, maintained or even increased as the need grows larger and larger. We are committed to the decision that provision for graduate education and for special education to develop specialists be continued at their present high level of efficiency. These and other essential duties which unfold continually in our daily duties must, and will be, accepted and accomplished to the extent of our capacity. In the inescapably somber times ahead, often our fortitude will be challenged, often our ideals will appear frustrated by circumstance; but the true mettle of a profession emerges only when tried in the fires of adversity.

Changes, unavoidable and unpleasant, face us in our daily and professional lives; we do not speak of the inevitable essential sacrifices, we speak rather of the glories of service. To serve is our destiny, to serve freely, faithfully and effectively is our wish and ambition.

Our duty is plain to see: we shall go forward to our task, and we shall not fail.

271 West Short Street.

AIR RAID MEDICAL ADMINISTRATION IN ENGLAND

HUNTINGTON WILLIAMS, M.D., DR.P.H.
Commissioner of Health
BALTIMORE

Air raid medical administration in England is merely one part of the general ARP services, Air Raid Precautions services, under the Ministry of Home Security or the Home Office; but the medical services are split between two ministries, the other half being the Emergency Medical Services which are under the Ministry of Health at Whitehall, just next door to the Home Office.

The three major subdivisions of blitz medical administration are the first aid services, the ambulance services and the hospital services. I would have you picture these as integrated most closely in the field or at the site of what the British call the "incident." This is a carefully selected word because of its minimum of panic producing power. At the site of a bombing the medical services are closely tied with all the other civil defense services: those of the air raid wardens, fire and police workers and the like.

The matter of "digging them out" is extremely important; one cannot do much first aid until the débris has been picked off mostly by hand. Let me recommend the phenomenally well written book called "Digging for Mrs. Miller." If you want a bad dream it will take you about an hour to get one, but at least you will know what the medical man, the rescue man, the digger, the stretcher bearer and all the others, firemen and policemen and allied workers, have as joint tasks. And this in London was not just occasionally—not for half an hour or an hour or two, not just for one or two nights in a week or a month, but twelve hours on end and ninety nights in a row. That was the blitz at its worst in London. This book was written by John Strachey, an air raid warden who went through these incidents in London, and he describes verbatim what the people say to one another as they are digging them out, what was said at the "incident" and at the hospital and as the families tried to find their kin or friends the next day.

The other best text is Colonel Prentiss's superior book entitled "Civil Air Defense," published by the McGraw-Hill Book Company. This gives a clear picture of the whole civil defense program as set up in England.

FIRST AID WORK

The English language is not the same on the two sides of the Atlantic Ocean. That is always a surprise and means that occasional key words have to be more or less translated. Here and there in this study of the administration of blitz medicine we had to translate such words into American English. For instance, in first aid

Read as a part of the Symposium on War Medicine in the Tenth Annual Postgraduate Clinic of the School of Medicine of the George Washington University in Washington, D. C., Feb. 21, 1942.

work the first term you come to is "first aid party." That means a group of four trained workers and a leader and an automobile, what we would call a "squad." Then next is a "first aid post." That we would call a casualty station. It is a place in the neighborhood that has been set up in a protected basement, and that word "protected" itself in a technical sense means that the ceilings and the walls have been so strutted and supported that if the whole building above is blitzed off the work can go on without disturbance. The word comes up in its technical sense in hospitals and ambulance depots and wherever any essential work is going on during a blitz.

The term "first aid depot" indicates protected sleeping quarters where the first aid workers sleep and rest, because, with ninety nights in a row of this kind of work, naturally fatigue comes on. Here are double decker beds and strutted ceilings and walls so that there can be an opportunity to rest.

Another technical word in first aid is the "first aid point." I spent nearly a month trying to find one, and the explanation was simple—you couldn't find it in London because it is a rural first aid post that you would only find at a four corners in a county somewhere. Here there is a trained worker, man or woman; there are some bandages and splints and a stretcher and a telephone, so that if there should be an incident in the neighborhood a wounded person could be cared for and then taken to a hospital or a mortuary. I mention mortuary with purposeful emphasis. This is a type of casualty service different from anything before, I believe. About one half of the casualties are fatal. You can imagine, with the buildings tumbling in all directions, that it would be so.

The first aid workers in parties or squads like all the other ARP or civil defense workers in England (and it is being developed similarly here) are specially trained for their work. They must enroll often as volunteer unpaid people and take courses of instruction, and then they are given insignia which they wear proudly, and those who have been through the blitz have developed the most superb morale and team spirit for mutual aid. The victims themselves in England have done likewise, so that things don't count any more; the matter in England that counts is to win the war; property damage doesn't seem to bother anybody so much, but it's "What can I do to help the person who is being blitzed down the street?" There is a really phenomenally spiritual element that has come in after the terrible blitz winter of a year ago. The officials in charge of the ARP service in the Home Office, and especially Wing Commander John Hodsoll, who is the Inspector General under Mr. Herbert Morrison, the Minister, were most gracious and helpful in the studies we were making. The Home Office gave us the latest reports of how improvements had been brought into their various services, and I can give you only a few examples because the time is short.

They discovered that an Incident Doctor, as he is called, was one of the most helpful in later developments. In other words, when a series of bombs have dropped—and they don't drop just one at a time, but they drop any number of explosives, not to mention these little incendiaries—all the services are called out, the fire, the engineering, the police and the medical services, first aid, ambulance and so on. There will be trapped casualties and there will be nontrapped casualties in different areas around perhaps ten or fifteen city blocks. Lately they have had what is known as an Incident Doctor, a resident usually of the neighborhood, called from a roster. He will have a corps of nurses and will visit one spot after another in this group of stricken street corners or residential or industrial areas. He will size up the situation, give morphine where needed, assign a nurse to watch and encourage persons who have not yet been liberated, and go on and do likewise at the second or third or fourth subdivision of the greater incident. They had not planned that at first, and they were pleased with the good effect this had on the morale of the wounded persons as well as of the workers to have a doctor there with his morphine as soon as they could dig in horizontally to reach the person they wanted to extricate maybe an hour or six hours or twelve hours later. That is the type of administrative development that they stressed for our consideration.

Of course all the medical men, like the other ARP workers, are in various categories, as to whether they are volunteers or paid service workers; and, if paid, whether on a full time salary or a part time salary. For the most part the medical men are paid either an annual salary or a retainer fee, or they are on a fee basis for the time that they spend doing blitz medical work.

THE AMBULANCE SERVICE

The ambulance service is the next step in the removal of casualties and a most important one. First they showed us that this was under the administrative control of a transportation or ambulance officer. By telephone he could call out a fleet of ambulances from an ambulance depot in the neighborhood if it was a small incident. If it was a greater incident the responsibility would rest on the chief transportation officer. Let us say for Greater London, when more than one area or borough needed aid the telephone would call on an adjacent administrative unit, and it would send in ambulance services or medical or first aid services to aid the more stricken area. This goes by the technical term of "mutual aid," which is nationwide in these services and is quite remarkable and helpful in all fields of civil defense.

Among the ambulances they have, first, the straight automobile for what they call the sitting cases; then the motor truck, which is reconditioned for 4 stretcher cases, 2 above and 2 below with a passageway between. They showed us in one borough a new device, developed locally, where the upper stretcher by a simple little metal release lock could be folded down against the wall so the lower stretcher could be used for sitting cases; if there were 2 stretcher cases and 2 sitting cases, by this simple little mechanism the 4 could be taken in the same car, which would be inconvenient otherwise. That device has since been approved by the Home Office and has been standardized and printed up and sent out for the use of the entire country.

The whole matter of stretchers is planned with extreme care in England, and one practically never sees more than one type of stretcher anywhere in that country. It is important to have metal holders with little legs on them, but they are identical all over the nation, which means that, if a big or little ambulance service drives up to a hospital and has 4 or 14 or 40 or 140 patients to evacuate, the patients aren't taken off the stretchers. The stretchers are deposited on horses, and there is a stack of identical stretchers over against the wall in a pile maybe 6 feet high, and 40 stretchers, or the equivalent number, are taken down and go out with the ambulances. That exchangeability is one of the things they stress as most important for the rapid handling of many wounded.

Next, for evacuating big city hospitals out to rural areas, the Green Line bus was used, reconditioned for ambulance use. The Green Line bus, translated into American language, is nothing more than a Greyhound bus, and they have large fleets of these. These are reconditioned for stretcher use, two tiers, upper and lower, so that after a bad blitz a central downtown hospital can send from 50 to 100 patients out to a rural evacuation hospital and have the beds available for the casualties of the next night. That was done during the winter of the 1940-1941 blitz all over England whenever there was necessity. That is the third item, the Green Line or Greyhound bus turned into an ambulance that could handle perhaps 20 or 30 casualties lying down.

Fourth, the ambulance or hospital train, which might have nine or ten coaches set up and reconditioned for ambulance service, and by this I mean what would in this country be similar to our open baggage car with stretchers on both sides in two tiers. These are always standing by on the railway siding in readiness in case of invasion or a severe blitz. They were used mostly when the army from Dunkerque was evacuated back from Dover and have been used only occasionally since that time.

A series of specific questions which Dr. Baehr wished answered by Prof. F. R. Fraser, who is the Director General of Emergency Medical Services in the Ministry of Health, are illuminating. Dr. Fraser in every regard has the same position in England that Dr. Baehr has in this country as Chief Medical Officer of the Office of Civilian Defense. He and Hodsoll and Sir Wilson Jameson, the Chief Medical Officer of the Ministry of Health, were most kind and patient in helping us get our information together.

Dr. Fraser said "It is essential that there should be elasticity in planning and rendering medical services in order to meet the actual blitz needs at any given time. The expected and the unexpected occur and create needs in entirely unpredictable proportions. The medical and dispensary squads are needed in the hospitals and probably should stay there during periods of blitz. The so-called incident doctors from the neighborhood of an incident are better to have on call to go to the place of a bombing. Mobile teams are not used very much." That means mobile surgical units in specially equipped motor trucks, but this opinion on their usefulness varies in different parts of the country and with the different feelings of the local medical chiefs in charge. "The hospital would do well to call for needed assistance to aid its own staff when overworked in an emergency. This is not done very much, for the following reasons: first, local hospital pride; second, the hospital medical staff is very busy and does not realize that it is being pushed, but it could do better work if it asked for help from another hospital at a distance where there was not a rush of cases at the moment; third, communications break down, the telephone may be blitzed out and the messenger services inadequate; fourth, the hospital called to render the assistance may be too busy to send it. The loan of medical and other teams from hospitals works well where you have an isolated incident or bombing; not so well if there are several incidents at the same time; which is quite usual.

"First aid party workers have a doctor and a nurse as a rule, and an auxiliary nursing force, or nurses' aides or stretcher bearers, with morphine and strychnine and surgical dressings. Each doctor is more or less in charge of his own equipment, and if he needs more than he has he asks for aid by telephone from the control center, which will send a mobile unit if requested."

Another matter was stressed not only by Professor Fraser but by many other workers, and it is a point of great difference of opinion both in England and in this country. I was repeatedly told that the latest experience indicates the wisdom of trying to do as little first aid work at the incident or in the field as possible but to get the patient to a hospital unless the trouble seems to be trivial, in which case the first aid post or casualty station in the neighborhood can do the work.

No heat and a minimum of light was used at the first aid posts or at an incident. There is a great dread of any light, for fear of attracting more bombs from above. The mobile unit, however, and the ambulance unit would have a hot water bottle and a primus stove for warmth, filling hot water bags and making hot tea. The latter is of the utmost help in resuscitation and assisting morale, and for the British ranks alongside the cigaret.

"The rescue party, that is the digging party, which is a group that hand picks the masonry and débris off the victims with or without mechanical aid, has as its first job to get out the trapped casualties and to make the casualties accessible to the stretcher parties; but to know first aid is essential for them as well as for the first aid parties themselves. The rescue party man, while he generally is lifting off the débris, must also be able to give first aid and must know how to do so in order to guard against his hurting the casualty.

"Tetanus serum is never given at the incident or bombing but is always given whenever the skin is broken, either at a first aid post or at a hospital, and is recorded. You know of the kind of baggage tag or casualty card that is attached to each casualty. On that is recorded identification and other information and M¼ or M½ to show the dosage of morphine given. This is also marked on the forehead of the victim so that a second dose will not be given." Professor Fraser recommended a half grain of morphine as a minimum dose for blitz casualties. He said we should give plenty, although he said probably a quarter grain is given as routine in the field in most English ARP work.

The best way to black out a first aid station, he said, is to brick up each window and bond the brickwork into the wall, that is by using steel, if one can. Electric light is used indoors day and night. The door coming out must be a light lock which will show no light from the outside. A brick baffle wall 13½ inches thick is used.

HOSPITAL ADMINISTRATIVE SERVICES

The British have evolved a regional hospital administrative setup for the entire nation which they hope to carry over into the peacetime future. In London there are nine medical schools, and the teaching hospital for the medical school is the central sector hospital for an area extending about 50 miles out into the rural country on a pie shaped sector basis, some broad and some narrow. All the hospitals in a given sector are commanded by the hospital chief at the sector or apex hospital in London. Every day he gets telephone messages of how many beds are available in each of the twenty or thirty hospitals in his sector. Picture this during ninety consecutive nights of blitz, as they had during that terrible winter. He picks up his telephone and he says to a hospital here or there "I am sending you a hundred patients." There are no questions raised as to who will pay the bill or "We will take it up with the board of trustees" or "This is a private hospital" or "We will call you back in a half hour" or "We haven't

got the beds." This is blitz war medical administration and it works to perfection. I am sure you know that they planned for many more casualties than actually developed.

I would share with you a few of the things reported to me by Sir Girling Ball, who is the sector chief for the hospitals in sector III, radiating from St. Bartholomew's in London. St. Bart's, as it is known, has about five hundred nurses, either registered or student. Peacetime nurses were sent out, as a rule, to the sector peripheral hospitals. Oddly enough they call a base hospital something that is out of the city; we might call it an evacuation hospital.

The peacetime nurses were sent to these peripheral hospitals to the extent of about four hundred, which left just a little over one hundred at St. Bart's. Even this was not enough for the peripheral hospitals. To meet the needs the Ministry of Health organized the Civilian Nursing Reserve, and these have been added at St. Bart's and elsewhere as needed. In other words, the nurses are aided by trained assistants and auxiliaries or volunteers. If the hospitals in the outlying areas are not large enough to take care of the patients evacuated to them, they build one story cottage huts adjacent to the hospitals. This they call "upgrading" the hospital by adding one hundred or two hundred or five hundred more beds. It means anything up to doubling the size of the hospital by the building of "hutted annexes."

The sector out of St. Bart's had about two thousand five hundred nurses, including student nurses and reserve personnel. About two thousand of them were peacetime hospital staff nurses, and the other five hundred came from the group that had been trained, just as we are training extra nurses now in America.

Sir Girling was asked what were the main problems in hospital administration under the blitz, and these were his replies:

First, personnel. The great difficulty is staffing the base hospital, that means the outlying hospital, with medical, nursing and lay personnel, including cooks, orderlies, masseurs and other such workers. There is a shortage of physicians, of nurses, of workers, of every one and certainly hospital administration is not made any the easier by that.

Another problem, again under personnel, has to do with the billeting of nurses and others transferred out to the rural hospitals. The latter might be a mental hospital or a communicable disease hospital or a private hospital or a county or poor law or welfare hospital. In the country there is no housing available to care for the added personnel of the upgraded hospitals. These would need three hundred extra beds in the St. Bart's sector, and south of the Thames River the situation is even worse. The first planning was to meet the needs of the patients expected; but the needs of the hospital personnel were not anticipated, so it was necessary actually to use ward beds for sleeping the professional and other hospital workers who were sent out to do the nursing and other extra work.

Second, equipment. There is great difficulty in securing adequate equipment such as operating tables, x-ray and laboratory supplies, and kitchen equipment for upgraded hospitals. In London in peacetime there were just over twenty-one thousand voluntary hospital beds; that means private hospital beds, not government hospital beds; and seventeen thousand London County Council beds; these are public beds. In general the national government pays practically all the blitz hospital costs.

Sir Girling said "We greatly overestimated the number of casualties that we would have in London. Up to a figure of 30,000 casualties a day was forecast, when we actually had somewhere around 300." They overestimated by one hundred fold, but they never regretted it for a moment and they continually said that to have had the opposite situation occur would have been tragic, even criminal. I think we have a big lesson to learn in this country from that.

Then, transportation of patients. The manner of transporting the patients was not a great difficulty, but it was hard to secure the proper equipment in this matter. Lorries or trucks were needed, and there was a great need for more x-ray and pathology and surgical equipment, as well as beds and equipment for kitchens.

Each hospital in the sector retains its own autonomy, and this is true I believe in a general way throughout England. Each hospital has a medical officer, a lay superintendent and a matron; and each of these has a deputy. The hospitals in London channel through the London County Council to the Ministry of Health. In other parts of England the administrative channel is through a local and a regional hospital office.

Sir Girling then discussed blitz hospital financing. He said that the Ministry of Health pays for the casualty beds used. The hospital pays for the civilian sick. The Ministry of Health pays for all transfer of patients from the central to the outlying hospitals. If there is a crowding from the blitz, the civilian patients are sent out of the hospital to their homes or are crowded to make room to meet the need. In order to avoid delays in meeting the expenses in the hospitals, the Ministry of Health authorizes the lay sector official to pay for personnel and equipment. It may be a matter of purchasing twelve pillows or hiring an extra cook. Each quarter or semiannually an expense account is sent to the Ministry of Health for repayment. In other words, the hospital goes ahead and pays the bills out of its own pocket, knowing that it will be repaid by the central government.

We paid a visit to a part of St. Bart's and to some of the other hospitals in sector III. Great emphasis was placed on the need for a one way ambulance route, incoming and outgoing, the swapping of stretchers, such as I have mentioned, and the careful keeping of records, which is not unusual in any hospital. Our host said the clerks who make the entry records when the blitz patients first come in to be admitted need to be tough, because these patients look mighty bad when they arrive and the clerk must be able to stand the sight of blood. I imagine he remembered instances in which the clerks had not been tough enough to take it.

At the receiving end of the hospital there must be a subdistributing office with wall charts and spot map pins indicating the beds which are full and which are available, and what operating room facilities are available at the moment. This brought up the question of the operating room being underground and protected, in that technical sense that I mentioned, where you could go on operating if the rest of the hospital was blitzed away. In Liverpool I saw such a hospital, a thousand bed hospital, where there remained hardly anything that was less flat than this table top. All this happened one night in May 1940, when the city was heavily hit and the hospital was made just a shambles.

Often the operating room must be on an improvised basis because the main one, or the protected one even, may have gone. Then there must be a provision for transferring the patients upstairs by elevator if that is

considered wise. Of course, the buildings that are the safest are steel and concrete, although you want to keep away from the top floor; the next are buildings that are not of brick—brick is most fragile and just seems to melt away when a bomb comes anywhere near it.

It is most vital to have a carefully planned resuscitation room where the most critically ill or dangerous patients will be taken. Here the needs for blood transfusion, plasma and methods of properly warming the patients with blankets or hot water bags or electricity should be available. Some oxygen is used, but there will be need for much more if phosgene gas warfare is employed. Of course, they have had no gas war yet.

In desperate cases and in a rush it may be necessary to give up separating the sexes as they are brought into the resuscitation room, for these patients will die in two or three hours, although some of them are saved by operation.

A few other administrative blitz hospital matters are of interest. Sir Girling showed us the downstairs central telephone and stenographic rooms, and how carefully strutted and girded and protected they were, so that if the hospital was blitzed the work of these vital key rooms would not be disturbed. This, of course, includes the operating rooms that I mentioned, and also the control room for sending out hospital messages, where the telephone operators sit. In St. Bart's Hospital there are six floors of concrete above, so it was the safest room in the hospital and therefore had been improvised for this special use.

Next to this protected space there was a loud speaker service over which an air raid warning siren could be broadcast to all the dormitories in the hospital and its various branch buildings where the staff might be asleep, and to the shelters used by the hospital personnel during raids; but the siren broadcast is not sent to the wards or rooms where the patients are living or sleeping, though everywhere else.

The senior medical officer, and that was Sir Girling Ball himself, must have sleeping quarters down near this protected section of the basement, and we saw the double decker beds used, right next door to the telephone center, where he often was himself during the bombing of the previous winter.

It is important to have an emergency Diesel engine system of electric lighting for the central part of the hospital used in blitz casualty service, to supplement the regular electric current and the normal lighting if that should be blitzed away, and that often happens. The Diesel engine system should be connected with all reception rooms, resuscitation rooms, operating rooms and the elevator. It is vital to have the main x-ray services and electrocardiographs in the cellar and well protected in addition, and to have mobile x-ray services that can be taken to the bedside.

Much of this you will find described in an OCD bulletin that is about to be made available and that has already been printed, I believe, in some of the hospital journals. It was prepared by two special American committees on the protection and the administration of hospitals during a blitz. There must be a temporary mortuary in a protected area, and this is most necessary in heavy blitzing, because, as I said, about half the patients die.

In a city under bombing it is important to try to keep most of the patients off the top three floors of the hospital. This is not always easy, and it depends on the size of the hospital. Likewise the danger of glass splinters makes the ground floor not too safe.

INDUSTRIAL PRACTICE

I want to add just a few words in regard to how civil defense services are built up also by and within industrial units or factories. We visited a large industrial plant near Liverpool where there were seven thousand employees, and out of that group twelve hundred had been specially trained as civilian defense workers, that is for first aid as well as for fire control and air raid warden work and demolition and other work that civil defense requires. These ARP forces are provided with double decker beds in protected quarters, and they use asbestos shields and a great deal of special paraphernalia to fight the blitz fires.

I mention this particularly because of the emphasis placed on fire control. As you know, these incendiary bombs are dropped by the hundreds, and in the old city of London before the needed fire fighting material had been gathered together more than half the damage was done by fire and less by the explosive bombs themselves. In the particular large industrial plant we visited the chief of civil defense was very proud of his special doctrine, which was never to allow an incendiary bomb to start a major fire. That is why I think we are having so much training now in American cities on how to handle incendiaries. He said if necessary have ten or fifteen or five hundred men assigned to controlling incendiary bombs, and he told us once that during some of their worst experiences, because of this policy, forty-two fires were put out within eight minutes at a total cost of $3.60. It would be impossible to estimate the financial damage if these fires had not been put out so very promptly. You wouldn't think that that had anything much to do with medical administration, but it is surprising how closely tied together all these services are in English civil defense.

There was an opportunity to visit the government research laboratory. Here was research especially on casualty studies of an analytic type in order to help the government in establishing shelter policies for the saving of the lives of the people who were trying to avoid being hit.

WELFARE SERVICES

While not a part of medical administration, I feel I should mention the fact that the related welfare services, after the blitz war had got well under way, were restudied and set up as integral administrative units in the various cities and other areas. So that the day after "Mrs. Miller" is dug out she will be able to get the answers to a few very human questions, answers that build up morale and without which morale is extremely low. First of all, Where are my relatives? Then, Are they dead or alive. If alive, What hospital are they in? Where shall I get breakfast? Where shall I get some clothes to put on? Where shall I sleep tonight? Where shall I get a little money? Is my house in need of being torn down or can it be given "first aid" treatment? (They use that word for buildings also.) Where can I get some insulin? I am in a bad way because of my diabetes, and the dispensary that I have been going to for years was blitzed away. Where can I get some insulin?

Early in the blitz war these welfare services had not been forecast or set up as they now are. It is said that 8 miles was the distance walked by one victim in order to get those questions answered in the beginning of the blitz, whereas now as a rule in a very large city hall room there is a big circular table and all these questions may be answered in this one room by going around the circle. Such improvements have done a tremendous

amount to enhance the morale of the people, and there are lessons in this experience for us in America.

There are many stories in regard to the evacuation of school children and expectant mothers and special groups. They have their medical problems, such as the slum children who at first took their lousy heads out into the rural areas, where they were not welcome.

The shelter policies are being modified to be more effective, but by and large the British have stood up under this blitz war in a perfectly superb manner. They have shown us the need of getting ready, a lesson that we are only too slowly learning. They have in every way set an example that should encourage people in this country to get ready for whatever may come.

CARE OF THE NEWBORN PREMATURE INFANT

ALLAN C. BARNES, M.D.
AND
J. ROBERT WILLSON, M.D.
ANN ARBOR, MICH.

As a result of a better understanding of the physiology of the premature infant, neonatal deaths due to prematurity have declined steadily in the past few years. The present survey reports the survival rate of premature infants in the obstetric service of the University of Michigan Hospital during the past ten years. Throughout this period the equipment which has been available for care of these infants is equipment which can be obtained by any hospital regardless of size or location. While a special nursing unit is planned for the near future, premature babies have in the past been cared for in the regular maternity nurseries. This report, accordingly, presents a program of care for the newborn premature infant applicable to any neonatal nursery.

The progress which has been made in the care of these infants during the past decade has been sufficient to warrant subdivision into two five year periods, 1932 to 1936 and 1937 to 1942. While the development of the present program for care of premature infants has been more gradual than such a division would indicate, the use of these five year periods has the advantage of accentuating the contrast between methods which differ in certain fundamental respects.

During the first period, from 1932 through 1936, 126 viable premature infants were born and there were 41 deaths, a gross mortality of 32.5 per cent. From 1937 through October 1941 there were 147 viable premature infants and 14 deaths, an uncorrected mortality rate of 9.5 per cent. During the latter period the most important change had been the increased amount of nursing care obtainable for premature babies. More and better incubators were available and premature infant oxygen tents were used liberally. As a result of the newer developments in vitamin therapy, particularly with reference to vitamins B and K, their use has extended in the neonatal period. Because the present program has demonstrated its value by the decided decrease in mortality, it will be discussed at length later in this paper.

DEFINITION OF TERMS

In order to clarify the statistical analyses, certain definitions are necessary. The term prematurity as used here is based on the initial weight regardless of the supposed duration of gestation. A weight of 2,500 Gm. was taken as the dividing line, and newborn infants weighing this much or more were excluded from the study. This group was further divided into viable and nonviable premature infants. Included in the nonviable group were those babies who weighed 999 Gm. or less, leaving to be discussed 277 babies who weighed between 1,000 and 2,499 Gm. Four of these 277 infants were considered nonviable because of anomalies incompatible with life, and the statistics presented here are therefore based on a total of 273 premature infants. One of the 4 infants excluded from the series had a congenital abnormality of the pulmonary artery, while in the other 3 multiple strictures and obliterations of the gastrointestinal tract were demonstrated at autopsy.

Accidents of labor and the type of delivery were not accepted as reasons for further correction. Thus we included 2 cases of infant deaths in which delivery was complicated by placenta previa and the infants at birth showed severe circulatory and respiratory embarrassment. Several infants were delivered by forceps, and in 3 cases version and extraction on the second of twins were necessitated by undue bleeding. While such factors undoubtedly influence mortality, the primary problem remains one of caring for a newborn premature infant regardless of events in the delivery room. Accordingly, no correction was made for complications of labor or delivery.

Likewise no correction was allowed because length of life was considered too short. Because it has become customary to present prematurity mortality figures excluding babies who survived less than twenty-four hours, the mortality rate during the past five years for those premature babies who lived more than one day was calculated and found to be 5 per cent. With the exception of this single determination, however, the figures are based on data for all babies within the prescribed weight range in whom respirations could be established.

ANALYSIS OF CASES

The mortality rate for the 273 babies born during the past decade declined steadily. The contrast between the first and second halves of the period studied was striking. As a further contrast between these two five year periods, the size of the babies that died was noteworthy. From 1932 through 1936, the average weight of the infants who failed to survive was 1,929 Gm., while in the succeeding five years this figure decreased to 1,616 Gm. It is clear from this that the threat of death for the small premature infant has decreased and that more babies of lower weight are surviving.

During the second five year period fewer days were required for an infant to achieve a weight which would safely permit discharge from the hospital. Of more significance is the difference in the average daily weight gain of the infants. During the second period this was 22.9 Gm., as compared with 18.8 Gm. in the previous five years. This increase of 4.1 Gm. gained daily can probably be attributed to the improved program of premature infant care.

PROGRAM OF PREMATURE INFANT CARE

There can be no absolute routine for the care of any premature infant. The points listed in the following outline, however, are based on the average treatment of a large number of babies. No claim to originality is intended here, since this program is not unique to any institution. The burden of premature infant care falls chiefly on the nursing staff, with emphasis on infinite patience and attention to minute detail.

From the Department of Obstetrics and Gynecology, University of Michigan Medical School.

Care in the Delivery Room.—Immediately after delivery the baby is placed in the Trendelenburg position in a warmed premature infant jacket and covered with warmed blankets. After the pharynx has been cleared of mucus by gentle suction with an ear bulb syringe, 100 per cent oxygen inhalations are started. Although the intratracheal catheter is rarely necessary, it is kept ready for immediate use. Because of their potential danger, respiratory stimulants such as caffeine, nikethamide or metrazol are seldom used but are available if needed. As a last resort in establishing respiratory action they may be used in doses which we feel should be no larger than 1 to 2 minims (0.06 to 0.12 cc.).

Silver nitrate is instilled into the eyes, but no attempt is made to replace the clamp on the cord with a tie and dressing. The baby is transferred to the nursery in its incubator or crib to minimize handling.

Bathing, Weighing and Diaper Care.—It is of utmost importance that the child be handled as little as possible. Weighing and bathing are postponed until these procedures will not jeopardize the life of the baby. In some instances this has been as long as three or four weeks after delivery. The baby may be removed from the incubator or crib only after it appears able to maintain its body temperature. Whenever the infant is moved it should be well wrapped in blankets as a precaution against loss of heat.

After the initial weighing and oil bath, both of which have been delayed until the baby is in good condition, the premature infant is bathed and weighed only on written order. Until a weight of 1,800 Gm. is reached, bathing and weighing at weekly intervals are usually sufficient. This interval is gradually decreased, until the baby is weighed and bathed daily when it has reached a weight of about 2,500 Gm. All baths are given with oil until the weight is 2,500 Gm., when soap and water may be used.

A diaper is placed under the buttocks inside the premature jacket on admittance to the nursery, but no effort is made to pin it. The diapers are changed and the buttocks and perineum oiled after each feeding. During this procedure gentle handling is imperative.

Incubator Care.—The final criterion for the proper control of incubator heat is the temperature of the baby. Axillary temperatures are taken every one to two hours until the infant's thermal regulating mechanism is stabilized, and thereafter the temperature is taken every six hours. Regardless of the reading of the incubator thermometer, the indication for the increase or decrease of external heat rests exclusively with the baby's reaction. As an aid in conserving body heat, all premature infants are kept in premature jackets even while in the incubator. The incubator humidity is usually maintained at 50 to 60 per cent, but again these limitations may be altered to aid in controlling the temperature of the individual baby.

Oxygen.—An infant whose estimated weight is less than 1,800 Gm. is placed in a tent or closed incubator into which 100 per cent oxygen is administered at a rate of from 2 to 4 liters per minute. This procedure is followed regardless of the presence or absence of cyanosis, its principal purpose being to reduce the respiratory effort and to conserve energy. Many of the larger premature babies also are placed in oxygen tents until the respiratory mechanism has demonstrated its ability to function normally.

Inhalations of a mixture of 5 per cent carbon dioxide and 95 per cent oxygen are used at frequent intervals during the first few days of life to stimulate respiration and to aid in expanding the lungs. The administration of this mixture is of particular value before and after feedings. In giving such inhalations the mask is held at least 1 to 2 inches from the face, and the infant is allowed to breathe the gas for a period of about one minute.

Feeding.—While few premature infants have starved to death, many have died as a result of aspiration of the formula. Feedings are withheld for twelve to twenty-four hours after birth, or until the swallowing reflex is present and the infant is strong enough to expend the energy required for eating. During the first day of feeding only 5 per cent dextrose is given to assist in washing swallowed mucus through the stomach and to supply fluid; thereafter breast milk is given if available, or a dilute evaporated milk formula may be used. The initial feedings may be as little as ⅛ ounce (3 cc.) and are given at one to two hour intervals, depending on the size and strength of the baby. The amount offered and the time interval between feedings both are increased as the infant grows stronger and is able to take more food. Each baby is fed in its crib in a semi-Fowler position and is removed for feeding only after a weight of approximately 2,200 Gm. has been attained. After each feeding the baby is "bubbled" by raising its head and gently patting its back without removing it from its crib. The position is then changed and the head is turned to one side to prevent aspiration in case the food is regurgitated. Crib feedings are continued until the infant becomes accustomed to the handling necessitated by daily bathing and weighing.

The small initial feedings may be given from an eye dropper, the tip of which is covered with soft rubber tubing. As the sucking reflex develops and strength is gained, the infant may be graduated to a Breck feeder and finally to a nursing bottle with a small nipple. If during a feeding any sign of respiratory distress appears, nothing more is offered at that time, and it is often wise to omit the next scheduled feeding.

Isotonic solution of three chlorides or isotonic solution of sodium chloride may be given subcutaneously to supplement the fluid taken in the formula. The amount that may be given at one time, however, may be limited by the lack of subcutaneous fat in the premature infant, and all parenteral administration of fluids should be made with care because resistance to infection is relatively low. In general, subcutaneous administration of fluids is preferred to gavage feedings because of the dangers associated with the latter procedure, especially when it is carried out by inexperienced persons.

With the exception of vitamin K, which is usually given during the first two to three days of life, no other supplementary feedings are added until about eight to ten days after birth. At this time vitamin B, usually in the form of an elixir of thiamine or concentrated whole yeast extract, may be started. One drop is added to the formula and increased by 1 drop daily until 8 drops are being given. Iron, in the form of iron and ammonium citrates, is added in the same manner after the baby has become accustomed to the vitamin B. A total of 10 drops of the iron solution is used daily unless diarrhea develops, in which case the dose is reduced. A concentrated vitamin D preparation is added next and is increased 1 drop daily until the therapeutic dose is reached. Ascorbic acid, usually in the form of diluted

orange juice, is the fourth addition to the supplementary medications and usually is incorporated in the feeding program by the time the baby is 1 month old.

Protein milk may be added to the formula after two to three weeks to increase the caloric and protein contents without increasing the bulk, and lactic acid is often added to the evaporated milk formulas in a concentration of 3 to 5 drops per ounce of milk. An attempt is made to maintain the caloric intake at about 75 to 100 calories per pound of body weight.

General Procedures.—Every precaution is observed to protect the infant from infection. Separate gowns and masks are worn when caring for the baby, and no one with an infection of any type is allowed to come in contact with it. The infant is shown only to its parents, and then only when its condition is such that it can be taken to the window in its crib. Until it weighs 2,500 Gm. it is shown no oftener than once weekly. Premature babies are discharged when the weight is between 2,500 and 3,000 Gm., depending on home conditions and the baby's general health.

SUMMARY

A program of premature baby nursing care applicable to any newborn infant nursery has resulted in the University of Michigan Maternity Hospital in a 23 per cent increase in survival rate of all premature babies born alive during the past five years. The survival rate during this period was 90.5 per cent for all viable infants whose weight was between 1,000 and 2,499 Gm. This figure, as well as the corrected survival rate of 95 per cent for those premature infants who lived longer than twenty-four hours, justifies continuation and improvement of this regimen.

THE INCIDENCE OF ACUTE LEUKEMIA IN CHILDREN

JEAN V. COOKE, M.D.
ST. LOUIS

It has long been recognized that the acute forms of leukemia are far more common in children than in adults and that younger children are more frequently affected than older ones. In the third decade acute leukemia occurs far less than in the second, and, after the age of 30 years, it is relatively rare as compared with earlier ages. In the acute forms of the disease as well as the chronic types seen in adults, males are more commonly affected than females, the figures showing from 60 to 79 per cent of males in various groups reported. There are no statistics available which warrant more than the foregoing general statements, since all reports have dealt with relatively small groups of 100 cases or less. The only series of sufficient size to allow an age incidence analysis was that reported by Ward,[1] who collected 729 cases of all varieties of leukemia, in 398 of which the condition was classed as acute. His figures have been widely cited as showing the age incidence. He gave no actual figures but expressed the age incidence in acute leukemia as a histogram curve of semidecades, showing a peak at 0 to 5 years and a second lower peak at 16 to 20 years. His only statement about the source of the cases is that "the series includes cases described in many countries, but the majority are British." It is likely that they may have been taken largely from published literature. Since the age incidence in his report varies considerably from that to be reported in this paper, it may be mentioned that, as far as acute leukemia is concerned, there are several features in Ward's series which suggest the possibility that the cases were selected in such a manner as to misrepresent the true age incidence. For example, apparently only 163, or 41 per cent, of the 398 patients were under 15 years of age, which is quite unexpected in a disease notoriously much more common in childhood, while almost 40 per cent more patients in his series were between the ages of 16 and 25 than between the ages of 5 and 15, which would also be very unusual.

From the Department of Pediatrics, Washington University School of Medicine, and the St. Louis Children's Hospital.

1. Ward, G.: The Infective Theory of Acute Leukemia, Brit. J. Child. Dis. **14**: 10 (Jan.-March) 1917.

MATERIAL

In an analysis of 126 cases of acute leukemia in children observed in the St. Louis Children's Hospital, certain features in the incidence of the disease were observed which suggested a similar examination of a large series of cases. This report is based on the analysis of the age and sex incidence in 1,500 cases of acute leukemia in children admitted to thirty-three children's hospitals or pediatric services in the United States and Canada during a period of years. In some of the institutions the older diagnosis files were not always considered trustworthy as to accuracy of diagnosis or did not permit the easy tabulation of cases, so that the series reported includes only the admissions in a recent period of years and may appear smaller than is expected from some clinics. In every instance, however, the figures represent successive admissions for the disease over consecutive years and can, therefore, be considered as representative of an unselected group so far as age and sex incidence is concerned. All forms of acute leukemia were included. Most of them were called lymphatic, although some were classified as acute myeloblastic, acute monocytic or acute myelogenous. The few cases of chronic myelogenous leukemia were omitted. Four of the hospitals (furnishing 15 per cent of the total cases) did not admit children over the age of 12 or 13 years.

RESULTS

The data from thirty-three children's services are shown in detail in table 1, in which the location of the clinics is given together with the name of the physician who collaborated by collecting the data. These data have been condensed in table 2, in which the age and sex incidence is summarized. The following features are to be noted:

Sex.—Of the entire group of children, 59.3 per cent were males, although there is a definite tendency in younger children to less disproportion in sex incidence than in the older ones. For example, in the first year of life more girls were found than boys, and in the first five years, in which more than half of all cases occurred, the percentage of boys was only 55.8, while in the second semidecade the percentage of boys had increased to 62.5 and in the third to 65. There appears to be a definite rise in the proportion of males starting with the age of 6 years. While the fluctuation in percentage in yearly age groups is such as to make a somewhat irregular curve, the differences between the larger groups of younger and older children and the progressive increase in proportion of boys with the disease appear of sufficient degree to be statistically significant. The explanation for this difference is at present obscure, although one might speculate as to whether it is to be interpreted as a progressive decrease

TABLE 1.—*Age and Sex Incidence of 1,500 Cases of Acute Leukemia in Children, Collected from Thirty-Three Clinics in North America*

Clinic and Physician Who Supplied Data	Age (Years) and Sex of Patients																																					
	0-1		1-2		2-3		3-4		4-5		5-6		6-7		7-8		8-9		9-10		10-11		11-12		12-13		13-14		14-15		Totals		
	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	All
Ann Arbor, Mich. University Hospital (Dr. C. F. McKhann)	2	2	1	0	4	1	3	4	8	4	3	1	0	0	1	0	2	0	2	2	0	1	1	0	2	0	0	0	1	0	30	15	45
Baltimore Harriet Lane Home (Dr. H. G. Guild)	2	3	3	2	5	6	7	6	9	4	2	3	5	5	1	0	3	0	3	1	1	1	4	1	0	0	0	0	0	1	45	33	78
Boston Children's Hospital (Dr. L. K. Diamond)	1	3	4	3	3	4	3	4	0	2	1	3	4	1	1	2	2	1	0	3	1	0	2	0	1	1	0	1	1	0	24	28	52
Chicago Bobs Roberts Memorial Hosp. (Dr. F. W. Schlutz)	2	2	0	2	4	0	2	1	0	0	2	0	2	0	0	0	0	0	0	0	0	1	1	1	0	0	3	0	2	1	18	8	26
Chicago Children's Memorial Hospital (Dr. M. Pierce)	3	6	8	5	12	8	7	6	2	3	1	7	3	1	3	3	3	0	0	1	3	2	2	1	0	2	..	..	..	..	47	45	92
Cincinnati Children's Hospital (Dr. G. M. Guest)	1	3	1	1	3	1	3	1	5	5	1	1	0	0	3	1	0	1	1	0	0	0	2	1	1	1	..	..	..	..	21	16	37
Cleveland Babies and Children's Hosp. (Dr. H. J. Gerstenberger)	1	2	1	2	5	3	2	2	6	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	18	9	27
Denver Children's Hospital (Dr. F. P. Gengenbach)	0	0	1	0	0	0	3	0	2	1	1	0	1	0	3	1	1	1	0	1	0	1	1	0	1	0	2	0	0	0	16	5	21
Detroit Children's Hospital (Dr. A. Klinkowstein)	1	3	3	2	8	10	7	5	4	3	3	2	4	0	5	2	5	2	1	0	1	5	1	2	..	..	..	..	..	..	43	36	79
Durham, N. C. Duke Hospital (Dr. W. C. Davison)	1	1	0	1	5	2	0	4	5	1	0	3	1	0	1	1	0	2	0	1	1	0	1	0	1	0	2	2	1	1	19	19	38
Indianapolis Riley Hospital (Dr. M. Winters)	2	3	2	0	3	0	3	2	1	1	3	0	1	0	0	0	3	0	1	1	0	0	0	1	0	0	0	0	0	1	19	9	28
Iowa City University Hospital (Dr. M. L. Floyd)	1	0	4	1	5	2	5	4	7	3	4	5	3	3	1	1	4	0	1	2	2	1	4	2	2	1	1	0	1	1	45	26	71
Kansas City, Kan. University of Kansas Hosp. (Dr. F. C. Neff)	3	1	8	1	2	1	2	2	1	1	5	2	0	0	1	1	1	2	0	0	2	1	1	1	3	0	2	0	1	0	32	13	45
Los Angeles Children's Hospital (Dr. M. Fallon)	1	2	6	2	8	1	5	9	6	2	4	2	4	2	1	1	3	0	2	2	2	1	1	1	1	0	0	2	0	0	44	27	71
Minneapolis Minnesota General Hospital (Dr. A. V. Stoesser)	2	0	0	0	1	0	0	0	0	0	0	0	2	0	0	1	3	0	2	0	1	0	0	1	0	0	1	1	1	1	13	4	17
Minneapolis University of Minnesota Hosp. (Dr. I. McQuarrie)	3	2	3	0	6	1	4	2	2	2	3	3	3	0	2	2	2	2	2	1	2	1	2	2	0	1	2	1	1	0	37	20	57
Montreal, Canada Children's Memorial Hospital (Dr. H. B. Cushing)	2	0	3	1	3	0	3	0	0	1	2	0	2	1	2	0	0	0	2	0	1	0	1	1	0	0	0	0	1	1	22	5	27
Nashville, Tenn. Vanderbilt University Hosp. (Dr. H. Casparis)	0	2	3	2	0	5	0	4	1	2	1	1	0	1	0	2	0	1	0	0	2	0	1	0	1	0	2	0	3	2	14	22	36
New Haven, Conn. New Haven Hospital (Dr. G. Powers)	2	0	1	2	4	3	2	0	0	2	0	3	1	1	1	0	0	1	0	2	3	0	1	1	1	0	0	0	1	1	17	16	33
New York Babies Hospital (Dr. R. McIntosh)	1	0	1	2	3	1	2	5	4	3	1	0	2	0	2	0	2	1	1	0	0	0	0	0	1	0	..	..	..	..	20	12	32
New York Bellevue Hospital (Dr. Robert Cox)	0	2	1	0	2	0	4	1	4	3	5	2	1	1	1	0	2	0	1	1	1	2	1	0	1	0	0	0	1	0	25	12	37
New York Mt. Sinai Hospital (Dr. B. Schick)	1	0	1	0	0	0	6	4	2	0	0	1	0	0	0	1	0	1	2	2	1	0	2	0	1	0	0	0	1	0	17	9	26
New York New York Hospital (Dr. S. Z. Levene)	0	1	0	0	0	1	1	3	1	1	3	1	3	0	0	2	0	0	2	0	1	1	0	0	0	1	0	0	0	0	11	11	22
Oakland, Calif. Children's Hospital East Bay (Dr. C. Sweet)	5	2	1	1	0	2	4	1	1	0	1	0	1	1	0	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	16	9	25
Philadelphia Children's Hospital (Dr. I. J. Wolman)	0	1	3	1	1	3	3	2	1	0	1	0	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	11	9	20
Pittsburgh Children's Hospital (Dr. H. T. Price)	3	0	0	1	3	0	3	4	7	3	0	0	0	0	0	0	4	0	3	1	0	0	1	0	1	0	1	0	0	0	26	9	35
Portland, Ore. University of Oregon Hosp. (Dr. J. B. Bilderbach)	3	3	0	0	2	7	2	4	6	2	2	0	2	2	1	4	0	0	4	0	0	1	1	1	1	0	1	0	0	0	25	24	49
Rochester, Minn. Mayo Clinic (Dr. S. D. Mills)	0	1	3	3	10	3	9	3	1	4	2	0	1	2	4	3	3	1	1	0	0	1	2	0	1	2	1	0	0	0	38	23	61
Rochester, N. Y. Strong Memorial Hospital (Dr. S. J. Clausen)	1	0	1	3	2	3	2	4	2	2	1	0	2	2	2	1	1	0	2	1	1	0	1	0	1	0	1	1	0	1	20	18	38
St. Louis Children's Hospital	2	7	1	2	6	11	12	6	3	8	7	6	8	1	6	1	2	3	4	3	5	1	5	1	3	3	3	3	2	1	69	57	126
San Francisco Stanford University Hospital (Dr. H. K. Faber)	2	0	0	1	0	1	2	0	0	1	1	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7	6	13
San Francisco University of California Hosp. (Dr. J. B. Castiglione)	2	2	0	0	3	2	3	1	3	0	2	3	0	1	3	0	1	0	4	0	3	0	0	0	0	0	0	0	1	1	25	10	35
Toronto, Canada Hospital for Sick Children (Dr. J. F. McCreary)	4	5	4	4	7	7	8	4	6	12	7	3	6	2	2	1	4	3	1	2	2	2	0	0	1	1	2	0	1	0	55	46	101
Totals by sex	54	59	68	45	120	89	122	98	100	76	69	52	64	29	49	31	53	23	43	30	38	24	39	18	25	13	25	11	20	13	889	611	1500
Totals by year	113		113		209		220		176		121		93		80		76		73		62		57		38		36		33				1500
Age, years	0-1		1-2		2-3		3-4		4-5		5-6		6-7		7-8		8-9		9-10		10-11		11-12		12-13		13-14		14-15				

in susceptibility in girls or a gradual increase in susceptibility in boys. Also the possibility of some relation of sex hormones to the variation in incidence suggests itself, but present knowledge of the distribution and effect of these substances before sexual maturity is vague.

Age.—The yearly age incidence from table 2 has been plotted in a curve in chart 1. The regularity of this curve is rather striking. From a moderate elevation in the first two years it rises abruptly and shows the highest incidence in the third and fourth years, with a sharp decline in the next three years and a progressive fall throughout the latter half of childhood. It is of interest that 40 per cent of all cases were in the period from 3 to 5 years and that almost half (48 per cent) occurred in the period from 3 to 6 years. The slight lowering of the curve after the age of 12 may be related to the fact that a few of the clinics did not admit children in these later years of childhood.

COMMENT

It is of some interest to examine the age incidence curve of acute leukemia for features on which some deductions with regard to the etiology or nature of the disease might be made. Two of the most widely held hypotheses concerning acute leukemia regard the disease as of (*a*) neoplastic or (*b*) infectious origin.

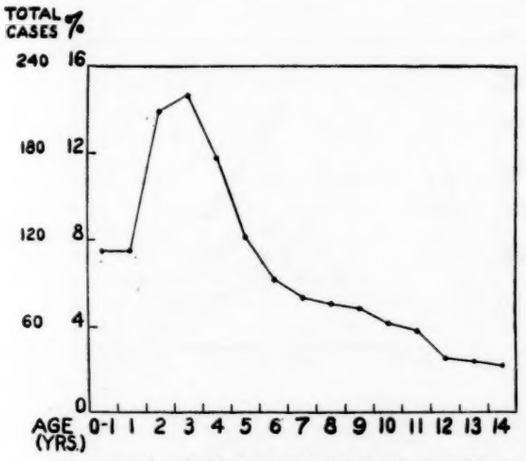

Chart 1.—Age incidence of acute leukemia in 1,500 cases.

So far as a comparison with malignant neoplasms is concerned, Warthin [2] states that "malignant tumors are relatively rare before puberty, but there is a steady ascending line of occurrence from childhood onward to middle life, both sarcoma and carcinoma showing a parallelism of occurrence." No collection of cases of malignant tumor in children exists of sufficient size to give accurate information about age incidence. Of other neoplasms in children the most frequently observed are those of the nervous system and of the kidney, although neither of these can be considered common. The majority of the latter are of embryonic origin (Wilms's tumor) and consequently develop only in the early years of life. Brain tumors are less frequent in childhood than in adult life, but Cushing [3] observed 148 verified cases (excluding tuberculomas) in children under 15 years of age. Most of these were gliomas. A comparison of the age incidence of these with the cases of acute leukemia (table 3) shows a wide discrepancy, since there are a progressive increase in incidence of brain tumors in older children and a progressive decrease in the incidence of acute leukemia. No statistical evidence is available to suggest a relationship in the incidence of acute leukemia to that of other neoplastic growths.

2. Warthin, A. S.: The Occurrence of Malignant Neoplasms in the Young, Arch. Int. Med. **15**: 444 (March) 1915.

3. Cushing, Harvey: The Intracranial Tumors of Preadolescence, Am. J. Dis. Child. **33**: 551 (April) 1927.

TABLE 2.—*Age and Sex Incidence in 1,500 Cases of Acute Leukemia in Children*

Age, Years	Boys	Girls	Total Cases	Yearly Per Cent of All Cases	Per Cent of Males
0 - 1	54	59	113	7.5	47.8
1 - 2	68	45	113	7.5	60.0
2 - 3	120	89	209	13.9	57.4
3 - 4	122	98	220	14.7	55.5
4 - 5	100	76	176	11.7	56.7
0 - 5	..	..	...	55.3	55.8
5 - 6	69	52	121	8.0	51.4
6 - 7	64	29	93	6.2	68.8
7 - 8	49	31	80	5.3	60.1
8 - 9	53	23	76	5.0	69.7
9 -10	43	30	73	4.9	59.0
6 - 10	..	..	...	29.4	62.5
10 - 11	38	24	62	4.1	61.3
11 - 12	39	18	57	3.8	68.4
12 - 13	25	13	38	2.5	65.8
13 - 14	25	11	36	2.4	69.5
14 - 15	20	13	33	2.2	60.6
11 - 15	..	..	...	15.0	65.0
Totals	889	611	1,500		59.3

The theories of the infectious origin of acute leukemia may be divided into two types. The first considers that the disease is due to a specific acute infectious agent as yet unidentified and is based chiefly on similarity of certain clinical manifestations in acute leukemia and acute infection, the chief symptoms common to the two being fever, prostration, asthenia and evident toxicity. The irregular occurrence of acute leukemia, its lack of communicability and the failure to identify any infectious agent have placed some doubt on its specific infectious origin. The second hypothesis assumes that the relation to acute infections is of a less specific character and that many types of infection may initiate the changes which result in acute leukemia. Since this complication is relatively unusual after infections, it is necessary to assume that it occurs only in certain persons in whom a constitutional inferiority of the hematopoietic system makes it vulnerable to injury by infections and possibly by other types of trauma.

TABLE 3.—*Comparison of Age Incidence of Acute Leukemia and Brain Tumors in Children*

	Acute Leukemia		Brain Tumors (Cushing Series)	
Age, Yr.	Number	Per Cent	Number	Per Cent
0 - 5	831	55.5	22	14.9
6 - 10	443	29.5	53	35.8
11 - 15	226	15.0	73	49.3
Totals	1,500		148	

That antecedent acute infection is directly concerned with the development of acute leukemia in a considerable number of cases is supported by many observations. It is relatively common to obtain the history that immediately preceding the development of symptoms of acute leukemia the child suffered from some acute infectious

illness, from which he had apparently recovered. Pierce,[4] for example, noted that this was true in 48.7 per cent of her series of 41 cases. In 126 cases from the St. Louis Children's Hospital such a history was given in 56, or 44.4 per cent, although no special inquiry about preceding infection was made. These antecedent

TABLE 4.—*Directly Antecedent Acute Infections in 126 Cases of Acute Leukemia*

Acute tonsillitis	18
Acute infection of respiratory tract, with fever and bronchitis	10
Acute cervical adenitis	6
Measles	6
Acute otitis media	4
Mumps	3
Acute febrile illness, undiagnosed	3
Scarlet fever *	3
Acute bronchopneumonia	2
Impetigo contagiosa	1
Total	56

* An additional child had acute leukemia soon after scarlet fever immunization, with unusually severe febrile reaction after each injection.

acute infections varied, although most of them were of the respiratory tract. They were classified as shown in table 4. The relatively high incidence of such antecedent acute infections gives support to the view that they may play an important role in the development of acute leukemia.

In considering the relation of acute infections to the etiology of acute leukemia in children, additional information may be obtained from comparing the relative age incidence of the two conditions. By far the commonest infections during childhood are those related to the respiratory tract. Although no statistics are available as to the age incidence of such infections, all pediatricians will agree with Brennemann,[5] who said "These [respiratory] infections have their greatest incidence and severity both as to the primary infections and the complications and sequelae in infancy and earliest childhood." In certain of the acute readily communicable childhood infections, however, morbidity figures as related to age incidence are available for comparison. In table 5 are given the age distribution of 7,379 cases of measles and 3,311 cases of diphtheria representing admissions to the Willard Parker Hospital during the five year period of 1919 to 1923, from the data reported

TABLE 5.—*Comparison of Age Incidence of Acute Leukemia and Diphtheria and Measles in Children*

	New York City, 1919-1923						Detroit, 1936-1940	
	Leukemia		Diphtheria		Measles		Measles	
Age, Yr.	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
0 - 1	113	7.5	572	7.8	377	11.4	1,433	3.5
2 - 5	718	47.8	4,650	63.1	2,213	66.8	14,405	35.8
6 -10	443	29.5	1,701	23.0	651	19.7	22,987	57.0
11 -15	226	15.1	447	6.1	70	2.1	1,449	3.6
Totals	1,500		7,379		3,311		40,274	

by Emerson and Hopping,[6] and, in addition, that of 40,274 cases of measles reported in Detroit during five years (1936 to 1940), furnished by Dr. F. H. Top, director of the division of communicable diseases of the department of health. These values are shown graphically in chart 2, in which will be noted the striking similarity in the age distribution curve of acute leukemia and those of diphtheria and measles in the Willard Parker Hospital series, each showing a rapid rise after infancy and a high proportion of cases in the early years of life. The cases from the Willard Parker Hospital include those of the more serious forms of the disease, and many of them were complicated by secondary infection. It is believed that these hospital cases illustrate the tendency of younger children to suffer more severely from acute infections in increasing numbers and, therefore, that this age distribution may be of value for comparison with the age incidence of acute leukemia. The figures are not cited to illustrate the true age incidence of these communicable diseases, since it is well known that such infections tend to show a second striking increase in the early school years. This is well illustrated in the distribution of the larger series of cases of measles in Detroit, although here also is seen the rapid primary rise in early childhood.

It appears reasonable to conclude that the age incidence curve of acute leukemia tends to follow closely

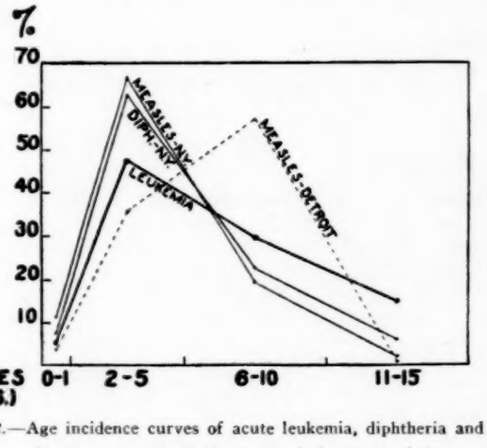

Chart 2.—Age incidence curves of acute leukemia, diphtheria and measles.

that of acute infections and that a rather high percentage of cases of acute leukemia develop shortly after an acute infection.

SUMMARY

An analysis of the sex and age incidence of 1,500 cases of acute leukemia in children showed the following trends:

1. During childhood there is a gradual increase in the proportion of males over females who have acute leukemia, the predominance of boys being greater in later childhood than during infancy. In the first year of life more cases were observed in girls than in boys.

2. The age incidence follows a regular curve, which rises from a moderate elevation in the first two years of life to a peak of highest incidence in the third and fourth years, with a sharp decline in the next three years and a more gradual progressive fall throughout the latter half of childhood.

It is concluded that acute infections form one of the factors in the production of the disease and therefore play an important part in its causation, since (1) the highest incidence in acute leukemia occurs in early childhood, (2) the type of its age incidence curve tends to follow the frequency of acute infections in children and (3) some acute infection frequently precedes the development of acute leukemia.

4. Pierce, Mila: Childhood Leukemia, J. Pediat. **8**: 66 (Jan.) 1936.
5. Brennemann, Joseph: Respiratory Infections, in Brennemann's Practice of Pediatrics, Hagerstown, Md., W. F. Prior & Co., Inc., 1937, vol. 2, chapter 39, p. 3.
6. Emerson, H., and Hopping, A.: Scarlet Fever, Diphtheria and Measles at the Willard Parker Hospital, New York City, 1919-1923, Am. J. Pub. Health **15**, supp. February 1925.

HYPERTENSION DUE TO RENAL EMBOLISM

ARTHUR M. FISHBERG, M.D.

NEW YORK

Since 1938 I [1] have observed 4 cases in which embolization of one or both renal arteries was followed by a pronounced rise in arterial pressure. Prinzmetal [2] has studied a similar case in detail. Since the 4 cases observed in the span of four years were detected without special search in the course of routine ward work, it would appear that hypertension is more than a rare manifestation of renal embolism. For this reason, and because of the theoretical and practical connotations of the elevation of blood pressure occasioned by embolic plugging of a renal artery, the cases seem worthy of publication.

CASE 1.—T. H., a man aged 42, was admitted on Oct. 22, 1938. He had felt entirely well until three weeks before admission, when he suddenly had severe constricting substernal pain which radiated down the right arm. Accompanying the pain were extreme apprehension and moderate shortness of breath. He sweated profusely. The attack lasted about ten minutes and subsided spontaneously. He had similar seizures about every other day for two weeks. Most of the attacks occurred while he was walking, but others came on while he was in bed. He was then free of symptoms until the morning of admission, when he was awakened from sleep by an attack similar to the others.

Physical examination on admission disclosed no abnormalities other than moist rales audible at the base of the left lung. The electrocardiogram showed changes indicative of anterior infarction of the heart. The diagnosis of myocardial infarction was later confirmed by a roentgen kymogram.

Apart from occasional substernal discomfort, the patient felt well during his first days in the hospital. The rales at the base of the left lung disappeared. The temperature, pulse rate, urine and leukocyte count were normal. However, on November 2 the picture suddenly changed. The patient complained of malaise, the temperature rose to 101 F. and the leukocyte

TABLE 1.—*Blood Pressure in Case 1 After Renal Embolism*

Date	Blood Pressure	
	Systolic	Diastolic
10/22	108	70
10/24	100	56
10/26	76	46
10/29	108	60
11/ 2 (renal embolism)		
11/ 3	142	95
11/ 4	142	98
11/ 5	150	100
11/ 6	115	80
11/ 7	114	75
11/ 8	112	80
11/11	116	85
11/14	122	85
11/15	110	80
12/ 6	100	80

count increased to 13,000 per cubic millimeter. The temperature rose November 3 to 102 F. and the next day to 103 F., with the heart rate up to 100 per minute. He complained of pain in the left costovertebral region and the left upper quadrant. There were exquisite tenderness and muscular rigidity in the left costovertebral region. In the urine, which had previously contained only occasional white blood cells, there appeared a considerable amount of protein, and the sediment contained a few red blood cells and granular casts. These conditions lasted for about a week. After this the temperature, pulse and urine returned to normal and the pain and tenderness in the left costovertebral region disappeared. The blood pressure readings are shown in table 1.

Summary.—In a patient with myocardial infarction there developed an infarct of the left kidney due doubtless to embolization of an intraventricular thrombus. The renal embolization was accompanied by a definite rise in the systolic and the diastolic arterial pressure. The blood pressure returned to its previous level pari passu with the disappearance of the symptoms of renal infarction.

TABLE 2.—*Blood Pressure in Case 2 After Renal Embolism*

Date	Blood Pressure	
	Systolic	Diastolic
3/16	118	60
3/17	120	70
3/31	145	90
4/ 1	170	100
4/ 2	158	90
4/ 3	156	95
4/ 5	170	100
4/ 6	175	100
4/ 7	165	98
4/ 8	178	88
4/ 8	150	88 (death)

CASE 2.—I. B., a woman aged 26, was admitted March 15, 1939, complaining of pain in the right loin of four days' duration. She had had rheumatic fever at the age of 4 years and had been hospitalized several times in the past eight years because of heart disease.

Four days before entering, when feeling unusually well, she suddenly suffered excruciating pain in the right loin. The pain radiated anteriorly and to the right groin and lasted unabated for about ten hours. A physician then summoned diagnosed embolism from the heart to the right kidney. Slight pain in the right groin persisted until admission and the patient vomited occasionally. For two days before entering the hospital she was febrile, with a temperature as high as 103.6 F. She did not observe bloody urine.

Physical examination disclosed mitral stenosis with auricular fibrillation. There was tenderness in the right upper quadrant and the right flank. In the right side of the abdomen, below and behind the slightly enlarged liver, a tender, rather poorly defined mass was felt, which was thought to be the right kidney. The urine was of specific gravity 1.026 and had a 1 plus reaction for protein, but no red cells were observed.

Intravenous urography on March 18 disclosed no abnormality in the left side of the urinary tract, but the right upper part of the tract did not visualize. Cystoscopy was performed on March 23. Both ureters were catheterized the full distance. There was a prompt flow from the left side with a good concentration of indigo carmine in three minutes. Though there was no flow of urine on the right side, a retrograde pyelogram showed no abnormality of the upper part of the urinary tract on this side.

Severe pulmonary engorgement and then bronchopneumonia gradually developed. Tachycardia was more pronounced, and the patient became edematous. The venous pressure rose to 19.5 cm. of water and the saccharin circulation time to twenty-five seconds. Because of the likelihood that the hypertension due to embolism of the left renal artery contributed to the cardiac strain, Dr. George Baehr considered the possibility of performing a nephrectomy on the left side but decided that the patient's poor general condition precluded operation.

Of interest is the fact that red blood cells were only rare in the sediment on many examinations.

The patient did not suffer from renal excretory failure; two days before death the urea nitrogen content of the blood was 23 mg. per hundred cubic centimeters.

Necropsy was limited to the kidneys. It revealed embolic occlusion of the trunk of the right renal artery with massive, though not total, infarction of the right kidney.

Summary.—In a woman with mitral stenosis, embolic occlusion of the right main renal artery with massive infarction of the right kidney was followed by a rise in arterial pressure.

From the Medical Service of the Mount Sinai Hospital.

1. Fishberg, A. M.: Hypertension and Nephritis, ed. 4, Philadelphia, Lea & Febiger, 1939, p. 264.

2. Prinzmetal, Myron; Hiatt, Nathan, and Tragerman, L. J.: Hypertension in a Patient with Bilateral Renal Infarction, J. A. M. A. **118:** 44 (Jan. 3) 1942.

CASE 3.—S. B., a woman aged 45, was admitted April 22, 1940 to the orthopedic service of the Mount Sinai Hospital.

Six weeks before admission the patient fell from a street car and suffered a fracture of the left femur. There was no head injury. May 1 auricular fibrillation was detected. Operative reduction was performed, with insertion of a pin through the condyles. After the operation bronchopneumonia developed. May 22 the patient had a tonic followed by a clonic convulsion, which were repeated. There were three subsequent convulsive episodes. Numerous retinal hemorrhages appeared. The composition and dynamics of the cerebrospinal fluid were normal. The neurologic and electroencephalographic examinations suggested lesions in the right temporal lobe and the left hemisphere. There was no renal insufficiency. The day before death the urea nitrogen content of the blood was 13 mg. per hundred cubic centimeters.

Necropsy showed mitral stenosis with a large thrombus in the left auricle. The right renal artery was completely occluded by a massive embolus. The right kidney was extensively but not completely infarcted. There were multiple areas of softening in the brain apparently due to embolization and also embolic infarcts in the spleen.

Summary.—A woman with mitral stenosis and auricular fibrillation was admitted to the hospital for treatment of a fracture of the femur. While she was under observation, the blood pressure rose and proteinuria appeared. Necropsy showed embolic occlusion of the right main renal artery with infarction of the right kidney.

CASE 4.—F. J., a woman aged 36, was first admitted to the gynecologic service of Dr. I. C. Rubin Dec. 15, 1941 for interruption of a seven week pregnancy. She had had rheumatic heart disease with mitral stenosis since childhood. In recent years there had been repeated bouts of heart failure. On admission she had auricular fibrillation with signs of failure of both the right and the left side of the heart. She was given radiation in a dose calculated to produce abortion and castration and then discharged.

She was readmitted Jan. 10, 1942 because of vaginal bleeding and cramps in the lower part of the abdomen of eight hours' duration. With the onset of labor, dyspnea and orthopnea had been accentuated. There were physical signs of mitral stenosis and regurgitation with auricular fibrillation and evidences of pulmonic and systemic venous engorgement. The lower part of the abdomen was diffusely tender.

TABLE 3.—*Data on the Blood Pressure and Urine After Renal Embolism in Case 3*

Date	Blood Pressure		Urine
	Systolic	Diastolic	
4/27	...	..	No protein; normal microscopically
5/ 1	160	90	
5/20	...	..	No protein; normal microscopically
5/28	...	..	4 plus reaction for protein; few red blood cells
5/29	210	90	
5/31	210	110	3 plus reaction for protein; few red blood cells and hyaline casts
6/ 1	260	95	
6/ 2	190	100	3 plus reaction for protein; many red blood cells; many hyaline and granular casts
6/ 2	120	60 (ante mortem)	

The patient's intake of fluid and of salt were restricted, and she was digitalized. Solution of posterior pituitary was administered. January 10 the uterus was curetted during anesthesia.

January 11 severe pain and tenderness in the left costovertebral region developed. The temperature rose to 103.2 F. The urinary output fell to 350 cc. in twenty-four hours. On cystoscopy, both ureters were readily catheterized. The urinary flow and the excretion of dye were normal on the right side, but there was no flow from the left kidney. The urine from the right kidney contained a few casts and many red blood cells. The urea nitrogen content of the blood was 56 mg. per hundred cubic centimeters. The next day the blood urea nitrogen had risen to 78 mg. per hundred cubic centimeters. Tenderness was now present in both costovertebral regions. After the patient had been completely anuric for twelve hours, cystoscopy was again performed, but neither ureter could be catheterized. A nephrostomy was done on the right side; inspection revealed extensive infarction of the right kidney. The patient died about five hours after the operation.

Necropsy revealed mitral stenosis with pronounced dilatation of the left auricle. The left auricular appendage was almost completely filled by a partially adherent thrombus. The middle branch of the right renal artery was totally blocked by an embolus. The right kidney was extensively infarcted. The left main renal artery was entirely obstructed by an embolism just before its branching. The left kidney was almost completely infarcted.

TABLE 4.—*Data on Blood Pressure and Urine After Renal Embolism in Case 4*

Date	Blood Pressure		Urine
	Systolic	Diastolic	
12/15	138	70	Normal microscopically
1/10	162	86	2 plus reaction for protein; numerous clumped white blood cells; occasional red blood cells
1/20	182	105	4 plus reaction for protein; numerous clumped white blood cells; occasional red blood cells
1/21	182	90	3 plus reaction for protein; clumped white blood cells; 4 to 6 red blood cells
1/22	175	100	3 plus reaction for protein; many white blood cells; 4 to 5 red blood cells
1/23	152	98	2 plus reaction for protein; numerous red blood cells
1/24	114	62 (shortly ante mortem)	

Summary.—In a woman with mitral stenosis, emboli from the left auricular appendage produced occlusion of the left main renal artery with widespread infarction of both kidneys and consequent renal insufficiency and uremia. The renal embolization was accompanied by the development of hypertension.

COMMENT

The hypertension that may follow renal embolism offers further and direct clinical evidence that elevation of the blood pressure may result from an impediment to the flow of blood through one or both kidneys. It appears to present a particularly close analogue in man to the hypertension that Goldblatt [3] first produced in the dog by the application of his clamp to the renal artery and Page [4] duplicated by wrapping the kidney in cellophane or silk with resulting constricting perinephritis. The obstruction to the renal circulation produced by the embolus lodged in a large renal artery is more nearly akin to that of the Goldblatt clamp than that occurring in association with the other lesions of the kidney and its vessels which result in hypertension. There would seem little room for doubt that the same mechanism operates to elevate the blood pressure in the clinical case of renal embolism and in the dog with experimental obstruction to the renal blood flow. This conception accords with the finding of Prinzmetal and his associates [2] that perfusates from the infarcted kidney of a patient with hypertension due to renal embolism contained a pressor substance similar to that which they found in the totally ischemic kidneys of animals with clamped renal vessels.

Puzzling is the fact that while renal embolism produces hypertension in some patients, in others it does not, or at least not to an unequivocal degree. The

3. Goldblatt, H.; Lynch, J.; Hanzal, R. F., and Summerville, W. W.: Studies on Experimental Hypertension: Production of Persistent Elevation of Systolic Blood Pressure by Means of Renal Ischemia, J. Exper. Med. **59**: 347 (March) 1934.

4. Page, I. H.: A Method for Producing Persistent Hypertension by Cellophane, Science **89**: 273, 1939.

dilemma is the same one that occurs in connection with all forms of unilateral renal disease that may produce hypertension. Thus, since the original publication of Butler [5] it has been known that sometimes unilateral pyelonephritis results in hypertension, as proved beyond cavil in some cases by the return of the blood pressure to normal after nephrectomy; but in the vast majority of instances of unilateral pyelonephritis, hypertension does not result. The conditions still remain to be formulated which determine whether or not in man a unilateral impediment to renal blood flow elevates the blood pressure. Their formulation is of urgent practical importance because, in many cases of hypertension associated with unilateral pyelonephritic or hydronephrotic renal disease, nephrectomy has not been followed by any improvement in the hypertension. Among the factors that may be concerned in deciding whether or not a unilateral impediment to renal blood flow produces hypertension are the following:

(*a*) *The ratio of the partially ischemic but still functioning renal parenchyma to the total mass of functioning kidney tissue.* Recent experimental work suggests that whether or not hypertension occurs in association with a unilateral renal lesion depends on the balance between the precursory pressor substance (renin) formed in the ischemic renal parenchyma and the ability of the intact kidney tissue either to neutralize this substance by the elaboration of an antipressor body or to destroy or excrete it. In accord with this view, hypertension seems to result from renal embolism only when a large mass of the kidney is rendered ischemic.

(*b*) *The individual predisposition to hypertension.* Clinical and statistical investigations of recent years have demonstrated that in the large majority of instances so-called essential hypertension develops in persons of the sthenic constitutional habitus with an inherited familial predisposition to high blood pressure. At least a high proportion of these persons pass through a prehypertensive stage of many years' duration, during which the blood pressure is most of the time within normal limits but in which the liability to hypertension is demonstrated by an abnormally great response to the cold pressor test of Hines and Brown [6] or the precipitation of transitory hypertension by such emotional stimuli as an insurance examination. It would appear probable that the occurrence of unilateral renal disease in a person who has a hereditary predisposition to essential hypertension but who is still in the prehypertensive stage is especially apt to evoke a rise in blood pressure. I have seen a number of patients with hypertension following unilateral pyelonephritis or hydronephrosis who seemed to have this pathogenesis. Likewise, it seems probable that a large renal embolism would be especially likely to produce hypertension when affecting a person with a hereditary predisposition to essential hypertension. It should be remembered that this hereditary predisposition is extremely common, for almost one quarter of all deaths over the age of 50 are due to hypertensive disease.

(*c*) *The general condition of the patient.* This may militate against the development of hypertension. Especially important in this regard is the presence of fever. It has long been known that during fever established hypertension may fall. This drop in blood pressure has been assumed to be due to widespread arteriolar dilatation. The recent investigation of Smith and Goldring and their colleagues [7] indicate that at least some pyrogens produce a remarkable increase in renal blood flow, and fever would therefore be expected to be especially potent in counteracting hypertension of renal origin. It may well be that the presence of fever explains the great rarity of hypertension following even massive renal emboli in subacute bacterial endocarditis. Another important factor in determining the occurrence of hypertension is doubtless the necessity for a functional capacity of the circulation adequate to maintain a high blood pressure. The terminal fall in blood pressure in cases 3 and 4 was doubtless due to the failure of the circulation.

Excretory insufficiency of the kidneys plays no part in the production of the hypertension due to renal embolism. Only in patient 4, the 1 patient in whom the embolism was bilateral, did significant azotemia develop. That renal embolism can produce hypertension without seriously impairing the excretory accomplishment of the kidney would be anticipated in the light of the observations on experimental hypertension, in which appropriate clamping of the renal arteries produces elevation of the blood pressure without evident impairment of excretion.

The appearance of hypertension may be of diagnostic help in the sometimes difficult differentiation of renal embolism from such conditions as splenic or pulmonary infarction or diaphragmatic pleurisy. But it should be remembered that unequivocal hypertension does not occur in association with all large renal emboli. A fact perhaps worthy of reiteration from the diagnostic point of view is that massive infarction of the kidney may be present even though the urine contains only rare red blood cells; it is presumably due to suppression of the function of the infarcted kidney.

SUMMARY

Hypertension may result from embolism of one or both main renal arteries.

ADDENDUM

CASE 5.—May 13, 1942 I saw with Dr. M. F. Steinberg another patient in whom he had observed the development of hypertension due to renal embolism. This man had had a myocardial infarction several years previously. His blood pressure for two years had been less than 130 mm. systolic and 70 mm. diastolic. In December 1941 and March 15, 1942 he had emboli to the right kidney without change in blood pressure. April 19, 1942 he had an embolism to the left renal artery. Following this his blood pressure rose to 186/100 and has remained at about this level to the present writing (May 20, 1942).

5. Butler, A. M.: Chronic Pyelonephritis and Arterial Hypertension, J. Clin. Investigation **16**: 889 (Nov.) 1937.

6. Hines, E. A., and Brown, G. E.: The Cold Pressor Test for Measuring Reactibility of Blood Pressure, Am. Heart J. **11**: 1 (Jan.) 1936.

7. Goldring, W.; Chasis, H.; Ranges, H. A., and Smith, H. W.: Effective Renal Blood Flow in Subjects with Essential Hypertension, J. Clin. Investigation **20**: 637 (Nov.) 1941.

Public Opinion.—Public health to keep down epidemics, education for jobs, an acceptable dietary standard (enough bulk and variety to keep people healthy) are social objectives that are widely approved. Opposed are the colossal costs, the growing dependence of millions of people on public money, the sacrifice of initiative and resourcefulness, the continued breeding of the unfit too little checked by existing sterilization laws. Public opinion is required not on these things as separate items one by one but as related items. Public opinion is therefore hard to form. The relation of item to item rather than the items by themselves may be the critical part of the business. The worth of a man is also a part of it and how shall we determine worth?—Bowman, Isaiah: Enduring Purpose, *Assn. Am. Coll. Bull.* **26**:195 (May) 1940.

AN EVALUATION OF RHEUMATIC NODULES IN CHILDREN

A CLINICAL STUDY OF 167 CASES

ROWINE M. HAYES, M.D.
AND
STANLEY GIBSON, M.D.
CHICAGO

Subcutaneous rheumatic nodules were first described by Wells [1] in 1812. In reporting a case of "rheumatis of the heart" he said:

> Many of the tendons of the superficial muscles in this patient were studded with numerous small hard tumors, an appearance I have observed only in one other person, a thin and feeble man of 41 years who also labored under rheumatism.

In 1875 Meynet [2] gave a clear description of rheumatic nodules occurring in a boy of 14 years who was ill with rheumatic heart disease. The first comprehensive report on rheumatic nodules was that of Barlow and Warner [3] in 1881. Their study comprised 27 patients with rheumatic nodules. They described the number, size, location and duration of the nodules. They emphasized the fact that of the 27 patients 26 had a definite mitral murmur and the remaining 1 had a "murmurish first sound." Eight patients died. This presentation of the place of subcutaneous nodules in the rheumatic syndrome remains a classic after sixty years. Later English writers continued to observe and record the occurrence of nodules in a fairly large percentage of cases of severe rheumatic fever. Observers in our own country failed to find rheumatic nodules with anything like the same frequency with which they were detected in England. Holt,[4] who was familiar with the work of Barlow and Warner, stated in the first edition of his textbook, published in 1897:

> They are certainly not common in this country; notwithstanding that I have made it a rule to examine rheumatic patients for them, I have seen them but seldom, and they have been marked in only two or three cases. This, I think, has also been the experience of most observers in New York. From published reports, however, they appear to be much more frequent in England.

During the following twenty years the same opinion was voiced by other leading American pediatricians. In 1919 Brennemann [5] challenged this view. He said:

> In the last five years since we have been especially interested in these nodules and have really looked for them we have become increasingly convinced that they occur in our cases quite as frequently as they do in an equal number of similar cases of rheumatism in England.

Not only did his paper serve to call attention to the frequency of nodules, but, by giving the most accurate clinical description of nodules which we have found anywhere, he taught other observers how to identify them. More recent studies in many clinics have established the fact that rheumatic nodules are frequently found wherever severe rheumatic fever occurs.

This study was aided by the Harrold A. Bachman Memorial Fund.

From the Cardiac Service of the Children's Memorial Hospital and the Pediatric Heart Service of St. Luke's Hospital.

1. Wells, W. C.: On Rheumatism of the Heart, Tr. Soc. for Improvement of M. & Chir. Knowledge **3:** 373, 1812.
2. Meynet, P.: Rhumatisme articulaire subaigu avec production de tumeurs multiples dans les tissus periarticulaires et sur le perioste d'un grand nombre d'os, Lyon méd. **20:** 495, 1875.
3. Barlow, Thomas, and Warner, Francis: On Subcutaneous Nodules Connected with Fibrous Structures in Children the Subjects of Rheumatism and Chorea, Seventh Internat. M. Cong. **4:** 116-128, 1881.
4. Holt, L. Emmett: The Diseases of Infancy and Childhood, New York, D. Appleton & Co., 1897.
5. Brennemann, Joseph: The Incidence and Significance of the Rheumatic Nodules in Children, Am. J. Dis. Child. **18:** 179-186 (Sept.) 1919.

It is now generally conceded that subcutaneous nodules are pathognomonic of rheumatic fever, that they are usually associated with severe rheumatic heart disease and that the prognosis in instances in which they occur is always uncertain. In spite of the numerous observations which have served to establish the place of nodules in the rheumatic series, there are few detailed reports in a large number of cases as to their incidence, location, number, duration, relationship to other rheumatic phenomena and prognostic significance. The privilege of working in a large and active children's heart clinic, where hospital facilities are available for the seriously sick children, has given us the rather unique opportunity of making careful clinical studies on a large number of patients.

Our material comprised 167 children who exhibited rheumatic nodules. They were for the most part house patients at the Children's Memorial Hospital. Some were seen at St. Luke's Hospital, and a few were observed in the outpatient clinic at both institutions. All were observed within the past ten years, and all were seen personally by one of us.

Of the group of 167 patients, 86 were boys and 81 girls. This contrasts sharply with the sex incidence of our total group of patients with rheumatic fever and chorea, in which girls exceeded boys in a ratio of 1.35:1. Findlay,[6] in a series of 73 cases of rheumatic nodules, also found the proportion of boys to girls relatively high, being 1:1.3 in cases of rheumatic nodules, as compared with 1:1.8 in the entire rheumatic group.

The age incidence in our group showed a close parallelism to the age incidence for rheumatic infection in general. Ages at the time of onset of rheumatic nodules were 2 years, 2 cases; 3 years, 4 cases; 4 years, 4 cases; 5 years, 17 cases; 6 years, 18 cases; 7 years, 20 cases; 8 years, 29 cases; 9 years, 29 cases; 10 years, 21 cases; 11 years, 12 cases, and 12 years, 11 cases.

Rheumatic nodules occur most noticeably over the bony prominences of the joints of the extremities, but they are by no means limited to these locations. In this series of cases we have seen them over the elbows, knees, scalp, knuckles, fingers, ankles, spine, toes, dorsum of the feet, wrists, scapula, sternum, ribs, clavicle and iliac crest and along the tendons of the muscles above the wrist and above the malleoli and of the hamstring muscles. There were, however, certain favorite locations. The most frequent site was the elbows, nodules occurring in this location in 117 of the 167 cases. They were present on the knees in 82 instances, on the scalp in 50, on the knuckles in 50, about the malleoli in 47 and on the vertebral spines in 46. When numerous nodules were present they were usually widely distributed, whereas when only a few nodules were present they were likely to be limited in their distribution. In 26 cases they were found only on the elbows, in 8 only on the spine, in 4 only on the occiput and in 2 only on the knees. In 1 instance each the location was the wrists, knuckles and ankles.

Barlow and Warner,[3] in their original article, called attention to the frequent symmetrical distribution of nodules on the extremities. This point has seldom been mentioned in the recent literature, though it is worthy of emphasis. Thus, if nodules appear on one elbow, they are usually seen on the opposite elbow, and often in an identical location. They may not appear at exactly the same time, but, when a nodule or a crop of nodules is

6. Findlay, Leonard: The Rheumatic Infection in Childhood, New York, William Wood & Co., 1932.

seen in a given location, the opposite extremity should be carefully searched in the same region. Thus in 89 of our cases nodules were found in identical locations on the right and left extremities. They were for the most part symmetrical in 26 others.

The duration of nodules is difficult to determine accurately. In the first place, the exact time of appearance is uncertain unless the patient is inspected every day. Even if this is done there is often uncertainty as to whether a slight elevation which one observes is actually a nodule until it has been watched for several days. We have, however, seen sizable nodules which have apparently appeared overnight. The exact time of disappearance is as uncertain as the onset. Moreover, in the presence of several nodules in close proximity the fate of the individual nodule is not easy to follow. We can only say that some nodules have disappeared within a few days, whereas others have persisted for months. The duration of crops of nodules, as opposed to the individual nodule, may be much longer. We had 1 case in which nodules were exhibited continuously over a two year period and several in which they persisted for more than a year.

The number of nodules in the individual case varied widely. In many instances, particularly in our earlier cases, the exact number was not stated, the number being designated as few or many. In 67 cases the number was recorded and ranged from a single nodule to 108 nodules. In 15 cases 20 or more were present at one time, and in 7 of these there were more than 50.

Eighteen patients had one or more recurrences of rheumatic nodules. We were interested to ascertain whether the nodules followed a pattern similar to that of the original attack. We found no such relationship. In location, number and duration the nodules showed considerable variation from those in the first attack.

The relationship of rheumatic nodules to other rheumatic phenomena lends to them their chief importance. It is significant that in every 1 of the 167 cases other evidence of rheumatic fever was present. Chorea occurred in 18 cases, and joint pains in 144 cases during the period in which nodules were present. Definite signs of heart disease were found in 163 cases, or in all save 4 of the entire group. This is the outstanding fact in connection with rheumatic nodules. It is generally taught that heart disease is invariably present when nodules are discovered. This may be true, though we were unable to demonstrate its presence in 4 of our cases. Of the 163 cases of definite cardiac involvement, mitral damage was found in all. Aortic insufficiency was observed in 38 instances. A pericardial friction rub was encountered in 30. Both by physical and by roentgenographic examination, cardiac enlargement was detected in practically all cases, and in the majority it was well defined. In short, the physical and roentgenologic findings indicated in most cases a severe degree of cardiac damage.

Because of the severity of the cardiac lesions in the presence of rheumatic nodules, it is obvious that these nodules imply a serious prognosis. In this group of 167 patients 52 are known to be dead, a mortality of 31 per cent. It is interesting to recall at this point the mortality in Barlow and Warner's [3] series of cases, published in 1881. Of their group of 27 patients, 8 died, a mortality of practically 30 per cent. Doubtless the close approximation of the mortality percentages in the two groups of patients is largely accidental; yet we could not but be struck by the fact that these patients studied in England sixty years ago were apparently closely comparable to our own in the seriousness of their cardiac lesions. The mortality rate of our patients with nodules was practically twice that of our entire series of patients with rheumatic heart disease. Forty-eight died of congestive heart failure, 2 died of bacterial endocarditis, and 2 died suddenly without signs of advanced heart failure. Nodules were present at the time of death in 43 instances.

It has often been stated that the number of nodules is significant in prognosis, the greater the number the more serious the outlook. We have not found this to be true. The number of nodules averaged no higher in those who succumbed than in those who survived. As a matter of fact the 2 children who had the greatest number of nodules, 105 and 108, made excellent recoveries from their active infection and are getting along comfortably at the time of writing.

From the practical standpoint, nodules may be said to occur in a fairly characteristic clinical setting. They usually arise days or weeks after the onset of a rheumatic episode in which protracted infection is present, in which there is evidence of cardiac damage, usually severe in type, as shown by signs of valvular damage, cardiac enlargement and often pericarditis. Low grade fever is the rule, though the temperature may be normal for weeks at a time. The patient is pale and waxy in appearance. He seems fatigued, the appetite is poor, and signs of congestive heart failure are frequently present. The course may continue relentlessly downhill to a fatal termination. When recovery occurs, improvement is slow and many months usually elapse before convalescence is established. The disappearance of nodules does not necessarily indicate the cessation of active infection. Their continued presence, particularly when new nodules are appearing from time to time, is good evidence that the rheumatic process is active. We have encountered a few patients who showed all the signs of convalescence, including a normal sedimentation rate, before the complete disappearance of the nodules.

In a consideration of rheumatic nodules in relation to prognosis, something should be said on the negative side. Though the presence of nodules usually signifies severe rheumatic infection, the absence of nodules does not necessarily imply a mild type of infection. Indeed, in the case of the acute fulminating type, in which death occurs within a few weeks of the onset, nodules are likely to be absent. It is in the severely infected child whose illness is protracted that the rheumatic nodule is prone to appear.

SUMMARY

1. Of 167 children with rheumatic nodules, 86 were boys and 81 were girls.

2. The age incidence of patients with nodules closely paralleled the age incidence in the group with rheumatic infection in general.

3. Nodules were found in many regions, the most frequent locations being the elbows, knees, scalp, knuckles, malleoli and vertebral spines.

4. Nodules on the extremities tended to be symmetrical in their distribution.

5. The duration of nodules varied from a few days to several months.

6. Other rheumatic phenomena were present in every case.

7. Rheumatic heart disease was found in 163 cases.

8. Fifty-two patients (31 per cent) died.

9. The number of nodules in the individual case was not found to be important in determining the prognosis.

DEATH FROM ASTHMA

A WARNING

WARREN T. VAUGHAN, M.D.
AND
W. RANDOLPH GRAHAM, M.D.
RICHMOND, VA.

Miss V. S., aged 17, seen in September 1940, had asthma of thirteen years' duration. It was perennial and was present every day but was worse in winter. She had had many years of treatment. As is usual with this type of asthma, the etiologic factors were multiple, the basic condition being intrinsic, associated with long standing sinus infection but exaggerated by extrinsic factors such as sensitization to house dust and feather dust.

Miss S. was hyposthenic and undernourished. The therapeutic program consisted in improvement of her general condition and increasing the allergenic tolerance with injections of the appropriate extrinsic allergens and an autogenous vaccine. Treatment covered the interval from September 1940 until her death in 1942. During this time her condition was about 50 per cent improved. She was usually quite free in the daytime, having mild attacks each night frequently requiring one injection of epinephrine and with some exacerbation during the catamenia. In fact she improved to such a degree that she married in May 1941. She had three severe attacks of several days' duration occurring in February, August and November 1941 and accompanying acute respiratory infections. During these attacks she required epinephrine hourly or more often and at times became refractory to it. Fortunately, when she became epinephrine fast she responded to intravenous aminophylline.

On Feb. 16, 1942 she was having a fourth severe attack in which epinephrine was no longer effective, but she was still well enough to come to the office, requesting an injection of aminophylline. This relieved her temporarily, but the following day asthma again became severe. The family physician was called. An injection of morphine was given. Her respiration fell to 4 a minute and she died within a short time.

There is no doubt that this patient was suffering from very severe asthma, but she had had three attacks equally severe or nearly so during the period of observation from which she had recovered.

The danger of opiates in intractable asthma and status asthmaticus is widely recognized among allergists, who have attempted to disseminate this information in their writings. For several years every consultation report concerning an asthmatic patient, sent from our office, has contained a cautionary paragraph concerning the dangers of morphine. The number of asthmatic patients reporting for allergic study who state that morphine has been given them for acute attacks indicates the need for special emphasis on this subject.

Death from acute intractable asthma is quite rare. We have observed 8 such deaths among the several thousand asthmatic patients whom we have examined in the last twenty years:

CASE 1.—A woman in her fifties had severe asthma (not status asthmaticus) and valvular heart disease with decompensation. Death was due to the combination of circulatory and respiratory factors and was not associated with the administration of opiates.

CASE 2.—A woman after several quiescent months had a severe acute attack of asthma. She died within an hour after the second dose of ⅛ grain (0.01 Gm.) of morphine given her by her husband. She had been acutely ill less than twenty-four hours.

CASE 3.—This patient had had intractable asthma for two years. Receiving no great benefit from allergic therapy, she consulted another physician, who gave her digitalis, presumably on the theory that after such long-continued asthma there must be some resultant heart strain. There was no decompensation. At autopsy the heart was found to be smaller than normal, "contracted into a small mass," according to the report of the pathologist.

A dilated heart delivers reduced minute volume of blood into the vessels. Digitalis increases muscle tone, and as the heart approaches normal the minute volume increases, resulting in greater circulatory efficiency. But digitalis given to a normal size heart further contracts it, resulting again in diminished output, thus further impairing oxygen delivery to the tissues. This is particularly harmful to an asthmatic patient who is already anoxemic.

CASE 4.—A man aged 23, suffering from severe recurrent asthma and generalized dermatitis, had improved under allergic and dermatologic therapy and was sojourning in Florida when a severe acute asthmatic attack developed. The local physician gave him 1/16 grain (0.004 Gm.) of dilaudid hydrochloride. The report concerning his death four hours later stated that "after the injection he went to sleep and slept until some one realized that he wasn't breathing any more."

CASE 5.—A married woman aged 26 had had incessant attacks of asthma for five years. She had had a long period of treatment in the Johns Hopkins Protein Clinic, then by a competent allergist in Washington, D. C., followed by five months of treatment by us. The cause of death was unknown, but from the nature of the symptoms and the fact that she had been most despondent suicide was suspected. Autopsy could not be obtained.

CASE 6.—The patient had typical severe status asthmaticus which was not responsive to epinephrine, aminophylline, oxygen or avertin with amylene hydrate. The hospital intern had given her two injections of morphine, ¼ grain each (0.016 Gm.) the day before her death. We feel that the interval is rather long to implicate morphine, but morphine certainly did not help her, and her condition steadily grew worse. Permission for autopsy was not granted.

CASE 7.—An elderly woman in status asthmaticus had failed to respond to the customary measures of treatment. We first saw her but a short time before her death. Arrangements were quickly made for bronchoscopy in the hope that a plug of mucus might be found, but the patient died in the operating room before bronchoscopy could be started.

This is of interest because when there are obstructing plugs causing status asthmaticus bronchoscopy may be life saving. Not long before, bronchoscopic treatment of a patient with a similar condition, apparently moribund, had resulted in prompt recovery. The patient's asthma was then treated allergically and she has remained nearly free during the intervening four years. The latter case helps to answer the question which might have been raised had bronchoscopy actually been started in case 7, as to whether the manipulation might have caused death.

The eighth case is the one described in the opening paragraphs.

COMMENT

The administration of opiates for severe asthma is definitely contraindicated on two counts: First, with the person fighting for his breath and trying to get enough air to prevent anoxia, a drug which depresses the central nervous system, including the respiratory

center, increases the difficulty. Second, morphine is a parasympathomimetic drug, exerting a slight but definite bronchospastic effect. This is precisely what one is trying to avoid in the treatment of asthma. We recognize that many asthmatic patients receive injections of opiates without serious consequences but would emphasize that, the sicker the patient is, the greater is the risk.

Opiates should be rigorously avoided in the treatment of severe asthma, and especially so when other drugs, such as the ephedrine derivatives, epinephrine and aminophylline are far superior. Even when these fail, morphine and its derivatives should not be used.

Supplementary drugs such as digitalis should not be employed unless the need for them has been clearly established.

Bronchoscopy may occasionally be life saving.

201 West Franklin Street.

Clinical Notes, Suggestions and New Instruments

SEVERE ANGIONEUROTIC EDEMA FOLLOWING DIETHYLSTILBESTROL THERAPY

WILLIAM SAPHIR, M.D., AND A. R. WEINGLASS, M.D.,
CHICAGO

Every since its recent release by the Food and Drug Administration, diethylstilbestrol has enjoyed wide popularity among physicians as well as the public. Its real value has been attested by numerous clinical and experimental studies.[1] In view of the fact that toxic manifestations have already been reported,[2] a word of caution seems in order.

Toxic reactions reported were nausea, vomiting, abdominal distention and cramps after meals, anorexia, diarrhea, vertigo and paresthesias. Other toxic manifestations observed were cutaneous rashes such as diffuse brawny erythema and pruritic papular and macular eruptions.

In this paper we present a hitherto unreported toxic reaction to diethylstilbestrol, namely a severe and alarming form of angioneurotic edema:

REPORT OF CASE

Mrs. A. H., aged 53, appeared at the office of one of us (W. S.) on Nov. 21, 1941 with complaints of hot flushes, nervousness, palpitation and insomnia. The symptoms dated back three years, when she had stopped menstruating, but recently they have increased in intensity. The past history was insignificant, and in particular there was no history of previous allergic manifestations such as hay fever, asthma or urticaria. Physical examination was entirely negative except for a moderately elevated arterial blood pressure of 160 systolic and 95 diastolic and a slightly accentuated aortic second sound. The heart was not enlarged, the action was regular and rhythmic and no murmurs were heard. Counts of the white and red blood corpuscles and urinalysis were normal.

A diagnosis of menopausal syndrome was made, and diethylstilbestrol was prescribed, 0.5 mg. to be taken nightly at bedtime. No other prescription was given.

Six days later the patient returned to the office and stated that she felt much better in general but that for the past twenty-four hours she had noted a painless swelling of the right wrist. Examination revealed pitting edema of the right dorsum manus. Because of the possibility of a traumatic accident a roentgenogram was taken and showed no evidence of a pathologic condition. Conservative measures were recommended and the patient continued with diethylstilbestrol medication.

The next day the patient reported by telephone that the swelling of the right hand had subsided considerably but that a similar painless edema had suddenly appeared on the left dorsum pedis. Although the possibility of an allergic edema was then considered, the situation was not deemed serious enough to warrant immediate attention, and the patient was advised to appear at the office the next morning.

The same night, however, one of us (W. S.) was frantically summoned to the patient's home. The picture then indeed seemed alarming. The patient had retired without any discomfort; she suddenly awakened at 2 a. m. in great distress. There was extensive edema and eventration of both the upper and the lower lip. The edema extended well into the submaxillary and lateral cervical regions. The mouth could be opened only with great difficulty, and the tongue appeared swollen and enlarged. There was considerable cyanosis of the face and a slight laryngeal stridor was audible.

In view of the possibility of an impending edema of the glottis, the patient was immediately hospitalized. Calcium gluconate 15 grains (1 Gm.) was administered intravenously, repeated after two hours and again after six hours. Epinephrine was not given because the blood pressure had risen to 200 systolic and 100 diastolic, but ephedrine 3/8 grain (0.024 Gm.) was given at four hour intervals, as soon as the patient was able to swallow.

The alarming picture subsided rapidly, and the patient made an uneventful recovery. After twenty-four hours the edema had subsided, with the exception of some swelling of the lower lip and the submaxillary region, where it persisted for several days longer.

In order to ascertain, if possible, the etiologic relationship between the angioneurotic edema and diethylstilbestrol medication, the following cutaneous tests were performed:

1. Patch tests over the sternum with diethylstilbestrol in 0.85 per cent saline solution were negative after forty-eight hours, as well as the controls (of plain saline solution).

2. Scratch tests of the same solution on the left forearm produced a faint redness and slight edema after thirty minutes, whereas the saline controls remained unaffected.

3. Intradermal tests on the right forearm of 0.1 cc. of a diethylstilbestrol solution of 1:10,000 in 0.85 per cent saline solution produced a definite redness and nodulation measuring 1 cm. in diameter at the height of the reaction at forty-eight hours. Intradermal tests over the right forearm of 0.1 cc. of diethylstilbestrol solution of 1:2,000 in 0.85 per cent saline solution produced a strong reaction with considerable pain, edema, nodulation, pseudopod formation and erythema measuring 3 cm. in diameter at the height of the reaction at from eight to twenty-four hours. The reaction gradually disappeared during the next two days.

SUMMARY AND CONCLUSIONS

Available evidence indicates that diethylstilbestrol, an effective synthetic estrogen, is being widely used, perhaps partly because of the publicity given this drug in the lay press. Toxic reactions have already been described. The present report deals with a severe angioneurotic edema of the face and neck which appeared after a six day course of 0.5 mg. of diethylstilbestrol daily. Danger of edema of the glottis necessitated hospitalization.

The etiologic relationship between diethylstilbestrol medication and the angioneurotic edema is believed confirmed because of a strongly positive cutaneous reaction to diethylstilbestrol, because of the absence of other possible allergenic factors in a hitherto nonallergic person and, finally, because of the complete disappearance of symptoms following cessation of diethylstilbestrol.

104 South Michigan Avenue.

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APLASTIC ANEMIA DUE TO SULFATHIAZOLE

LEO M. MEYER, M.D., AND MARTIN PERLMUTTER, M.D., BROOKLYN

The protean toxic manifestations of the sulfonamide group of drugs are generally well known and have recently been summarized by Long and Bliss [1] and Long, Haviland, Edwards and Bliss.[2] The hematologic changes have largely fallen into two main groups, namely agranulocytosis and hemolytic anemia. Leukemoid reactions are also mentioned. Thrombopenic purpura due to sulfathiazole has recently been observed.[3] The following case, showing the picture of aplastic anemia following the administration of sulfathiazole, represents the first to be reported in the literature, so far as we are aware.

TABLE 1.—*Hematology*

	Hemoglobin, Gm.	Red Blood Cells, Millions	Reticulocytes, per Cent	Hematocrit, per Cent	White Blood Cells	Polymorphonuclears, per Cent	Lymphocytes, per Cent	Monocytes, per Cent	Platelets, Smears	Blood Transfusion, Cc.	Liver Extract, Cc.	Pentnucleotide, Cc.
Oct. 12	5	1.71	...	..	1,600	8	88	4	None	...	..	..
13	...	....	0.8	..	.....	..	..	..	.....	400	5	40
14	5.5	1.08	...	14	1,620	20	65	13	None	500	5	40
15	6.5	1.50	5	18	3,100	47	48	..	Rare	500	5	40
16	...	2.67	...	..	8,600	59	30	1	None	500	5	40
17	9.0	2.30	...	..	8,400	61	33	2	Rare	500	5	40
18	10.5	3.00	...	32	9,300	..	..	..	.....	250	5	10
											5	
20	11	2.51	...	..	13,000	64	35	1	Rare			
22	11	2.95	7	..	14,650	69	28	2	Rare			
27	9.5	1.57	...	..	9,050	72	21	1	Moderate	250		
30	9.5	1.65	...	..	8,900	74	22	2	Moderate	500		
Nov. 3	7.0	1.77	...	..	20,550	38	55	7	Rare			

TABLE 2.—*Bone Marrow Studies*

Date	10/14	10/20
Total nucleated cell count	40,000	150,000
Megakaryocytes	0	22
Platelets	0	Plentiful
Segmented polymorphonuclears	2	8
Nonsegmented polymorphonuclears	3	23
Myelocytes	27	10
Myeloblasts	1	1
Plasma cells	0	2
Lymphocytes	19	9
Normoblasts	30	41
Erythroblasts	14	3
Megaloblasts	1	..
Hematogones	3	2
Monocytes	0	1

B. C., a housewife aged 55, an Assyrian, was admitted to the Long Island College Division of Kings County Hospital on Oct. 12, 1941 with a history of fever and malaise of two weeks' duration. One year previously the patient was told that she had "infected kidneys." At that time she had a mild febrile course. Two weeks before admission she noted the onset of malaise and fever and the temperature varied between 102 and 105 F. Four days before admission to the hospital vague nonlocalized abdominal pains appeared. Two days later the family physician, having diagnosed pneumonia, prescribed 1 Gm. of sulfathiazole every four hours. This was administered for two days before her admission to the hospital.

On admission the temperature was 102.6 F., the pulse rate 100, the respiratory rate 36 and the blood pressure 110 systolic and 60 diastolic. Physical examination revealed that the patient was well developed and obese; she was pale and appeared acutely ill. Respirations were shallow and rapid, with slight wheezing. Numerous purpuric spots were noted over the entire body. There was a slight icteric tint to the skin. The conjunctivas and scleras were pale and slightly icteric. No petechiae were noted. No aural discharge or tenderness was present. There was no nasal bleeding. The mouth was edentulous. Ulceration of the gums was not present. The pharynx was not inflamed. The neck revealed no adenopathy and no venous distention. Examination of the lungs showed poor expansion bilaterally. There was no change in percussion. There were numerous fine crepitant inspiratory rales and coarse expiratory wheezes throughout both lungs. There was no detectable enlargement of the heart. The rhythm was regular and no murmurs were heard. The abdomen was obese and distended. Moderate tenderness was noted throughout. There was bilateral tenderness of the costovertebral angle, more severe on the right than on the left. Neurologic examination was negative.

The results of laboratory investigations are listed in the accompanying tables.

The temperature ranged between 102 and 103 F., slowly dropping to 98 F. on the fifth to the sixth day of hospitalization. Clinically the patient appeared to improve until the seventh day of her hospital stay (October 18). At that time the temperature rose and she became disoriented. There were a few inspiratory rales at the base of the right lung. The abdomen was distended but not tender. There were red areas on the buttock which appeared to be due to pressure. There was a mild intergluteal erosion. A lumbar tap was performed despite lack of signs of meningeal irritation. The spinal fluid pressure was 260 mm. of water. No other abnormalities were found. At this time the patient was incontinent and had to be catheterized. A specimen of urine contained a large number of pus cells. Methenamine and ammonium chloride were administered. Despite this and repeated bladder irrigation with boric acid, mild protein silver and 1 : 5,000 potassium permanganate, the pyuria became worse. The temperature ranged between 101 and 104 F. During the last week of the patient's life the intergluteal erosion became deeper, with sloughing of the deeper tissues. The patient slowly lapsed into coma and died on November 3, twenty-two days after admission.

TABLE 3.—*Urinalysis*

	Specific Gravity	Reaction	Albumin	Dextrose	White Blood Cells	Red Blood Cells	Casts	Crystals
Oct. 12	1.014	Acid	0	0	0	0	Many granular	Sulfathiazole 4 plus
14	1.015	Acid	0	0	Few clumps	0	Many granular	Sulfathiazole 4 plus
17	1.010	Acid	0	0	Occasional	0	0	0
21	1.010	Alkaline	2 plus	..	Innumerable	Occasional	Few granular	0
22	1.010	Alkaline	0	..	Innumerable	0	.....	.....
24	1.007	Acid	1 plus	..	Innumerable	0	.....	.....
29	1.012	*p*H 4.5	3 plus	..	Grossly purulent	..	.....	.....
30	.....	*p*H 5.0	....	..	Grossly purulent	0	.....	.....
31	.....	*p*H 5.0	....	..	Grossly purulent	0	.....	.....

At autopsy [4] the most significant gross findings were those of bronchopneumonia. Microscopic sections of the brain disclosed several areas of fresh and moderately recent hemorrhage. The bone marrow appeared hyperplastic with all the normal cellular constituents present.

SUMMARY

The patient presented the typical blood picture of aplastic anemia on admission to the hospital (table 1). Sternal puncture two days later revealed a hypoplastic marrow with depression of all the cellular components (table 2). With cessation of sulfathiazole administration plus repeated transfusions of blood there was a rapid rise in the number of platelets, the hemoglobin level and the number of red and white cells. No new purpuric

From the Medical Service, Long Island College Division, Kings County Hospital, Dr. J. Hamilton Crawford, director.

1. Long, P. H., and Bliss, Eleanor A.: The Clinical and Experimental Use of Sulfanilamide, Sulfapyridine, and Allied Compounds, New York, Macmillan Company, 1939, pp. 282-287.

2. Long, P. H.; Haviland, J. W.; Edwards, Lydia B., and Bliss, Eleanor A.: The Toxic Manifestations of Sulfanilamide and Its Derivatives, J. A. M. A. **115**: 364 (Aug. 3) 1940.

3. Rosenfeld, S.: Personal communication to the authors.

4. The autopsy was performed by Dr. Caspar Burn, pathologist.

spots appeared. Sternal puncture repeated only six days later (table 2) showed a remarkable recovery with an essentially normal differential smear. Megakaryocytes were present in normal numbers. Postmortem sections of the bone marrow showed a moderate hyperplasia with all the usual cellular elements present.

TABLE 4.—*Blood Chemistry*

	Urea	Creatinine	Chlorides	Carbon Dioxide	Icteric Index	Sulfathiazole
Oct. 12	128	3.7	...	....	9	.....
14	100	3.6	...	....	12	4.5 mg.
15	89	2.7	...	....	..	.....
16	..	...	...	....	..	Too low
17	82	2.4	...	....	..	.....
20	40	2.0	420	....	..	.....
22	62	1.9	...	48%	..	.....
28	71	1.8	...	....	..	.....
31	65	1.7	540	....	..	.....

It is important to note that the aplastic picture was evident after the administration of only 1 Gm. of sulfathiazole every four hours for two days, a total of 12 Gm. The immediate improvement on cessation of the drug with return of the bone marrow picture to normal indicates that the process is not an irreversible one if discovered early. It is also significant that there was no relapse to the aplastic state even though the patient subsequently died with evidence of sepsis.

224 Ocean Parkway.

THE INTRAPERITONEAL USE OF SULFATHIAZOLE, WITH SPECIAL REFERENCE TO THE PRODUCTION OF ADHESIONS

REPORT OF A CASE WITH SECONDARY INTESTINAL OBSTRUCTION

HENRY B. SUTTON, M.D., ITHACA, N. Y.

The intraperitoneal use of sulfanilamide and sulfathiazole to combat infective processes is without question an established procedure. These drugs are most frequently applied in those infections secondary to acute appendicitis.

Sulfanilamide, the most frequently used, is said not to produce peritoneal adhesions. There is considerable evidence to support this view.[1] Several authors express the same conviction concerning sulfathiazole.[2] However, there is evidence[3] that it produces peritoneal irritation in the dog, while sodium sulfathiazole produces dense peritoneal adhesions in the same animal.[3]

A difference of opinion exists on the question of inhibition of wound healing after local implantation of these drugs,[4] but there seems little question that in certain instances this does occur.[5]

My purpose in this communication is to report a case of acute perforative gangrenous appendicitis with peritonitis in which the intraperitoneal use of sulfathiazole was followed by adhesions, intestinal obstruction and secondary operation. In this case implantation of sulfathiazole into the wound was followed by long delayed wound healing and a keloid scar.

REPORT OF CASE

A boy aged 10 years had been ill three days when seen on Sept. 23, 1941. The onset and progress during this time had been typical of acute appendicitis. The attack was initiated by generalized abdominal pain with later localization in the right lower quadrant, nausea and vomiting. Examination revealed a temperature of 101.2 F. and 20,600 leukocytes with 90 per cent polymorphonuclears. The abdomen was rigid over the right lower quadrant with exquisite tenderness on direct pressure and also rebound tenderness at McBurney's point.

At operation a gangrenous appendix was found with a small perforation. There was considerable thin purulent exudate about the appendix which was retrocecal in the iliac fossa. The peritoneum was injected but there were no adhesions. The organ was removed in the usual manner with inversion of the stump, and 3 Gm. of sulfathiazole crystals was sprinkled in the iliac fossa and on the adjacent peritoneum covering the cecum and ileum where the exudate had been abundant. A Penrose drain was inserted to this point and the peritoneum closed tightly around it. The rest of the wound was closed loosely after 2 Gm. of sulfathiazole had been sprinkled throughout its entire extent. When he had recovered from the anesthetic he was given 0.5 Gm. of sulfathiazole by mouth every four hours.

His convalescence was not remarkable. The drain was removed on the fifth day after discharging, copiously, a serosanguinous fluid for the first seventy-two hours. Sulfathiazole crystals produced a troublesome bladder irritation for several days. The healing of the wound was retarded and was not complete until the twenty-eighth day. At that time the scar was elevated, very thick (¼ inch, or 0.6 cm.), broad (½ inch, or 1.3 cm.) and tender.

After his dismissal from the hospital on October 14 he was well for one month when he began to have attacks of severe abdominal cramps. These had become progressively more severe and frequent but not at any time was there definite evidence of obstruction until on December 14 when he had another severe attack associated with nausea and vomiting. There was stormy, defeated peristalsis and enemas returned clear. He was operated on immediately and a loop of ileum was found bound down to the parietal peritoneum posterior to the cecum. This produced a sharp kink with obstruction. The omentum was also firmly adherent at several points to the parietal peritoneum, the ileum and the cecum. No adhesions were present except in the area hereafter described. The peritoneum over an area corresponding exactly to that with which the sulfathiazole had been placed in contact was covered with a very fine reddish granular looking tissue. There were areas in which this was 2 by 5 mm. thick. The surface had the appearance of pale granulation tissue and was attached to the surface of the peritoneum. The subserosal tissue was not invaded.

All the adhesions were freed, a piece of the abnormal tissue was excised for study and the wound closed without drainage. Microscopic study showed only dense connective tissue with many small blood vessels. There was no evidence of sulfathiazole crystals. The microscopic diagnosis was collagenous connective tissue. This same type of tissue was found in the abdominal scar which was excised at the initial incision. The thick surface scar described before extended through all layers of the abdominal wall; again the area corresponded exactly with the distribution of the crystalline sulfathiazole.

The convalescence was smooth, the wound healed by primary union with a hair line scar and the patient was discharged in excellent condition on the ninth postoperative day. Two months later he was without complaint and in splendid health.

COMMENT

It seems reasonable to suppose that the excessive production of fibrous tissue both in the wound and on the peritoneum with its attendant complication was caused by an unusual tissue response to sulfathiazole. He has several other scars which have shown no tendency to keloid formation.

The widespread area involved and the location of adhesions at divergent points but only where the sulfathiazole had been placed seem sufficient reasons to rule out the presence of the single Penrose drain as a causal factor in this unusual peritoneal reaction.

106 East State Street.

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ACQUIRED SENSITIVITY TO SULFONAMIDE DRUGS

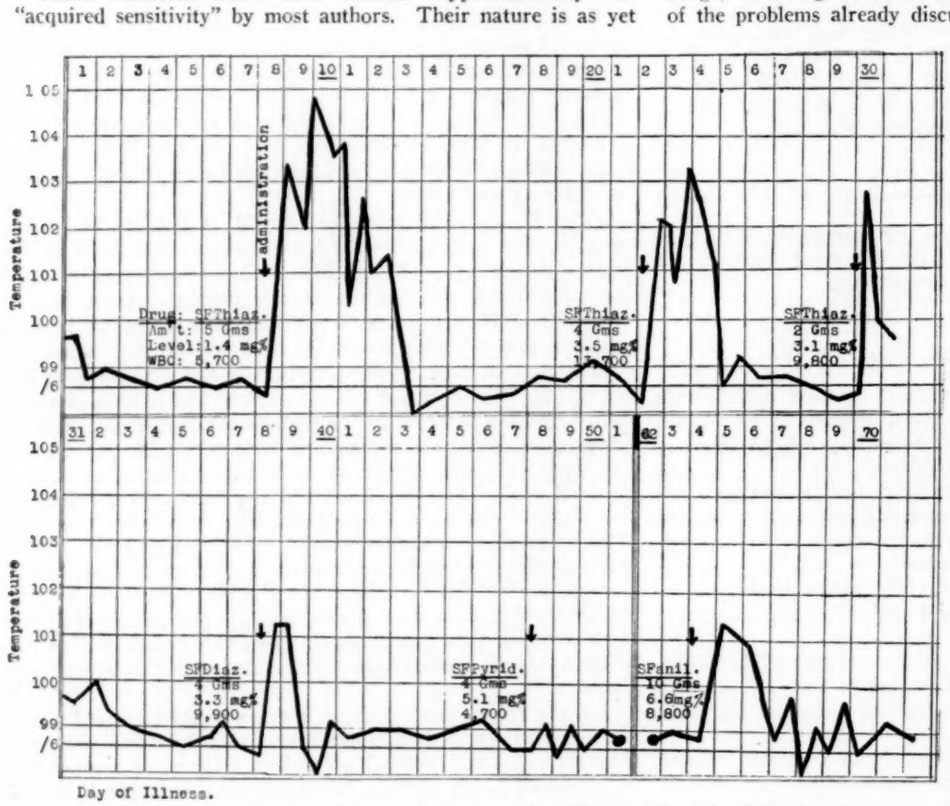
JACK NELSON, M.D., NEW YORK

With the growing use of sulfonamide drugs the problem of sensitivity to these drugs is taking on added importance. Besides the reactions which are known to occur one to two weeks following the institution of therapy there are also seen early reactions characterized by fever, chills, rash and pruritus within a few hours after the administration of these drugs and often in response to minute doses. Salvin[1] in 1937 reported a case of such sensitivity to sulfanilamide. In 1939 Thompson[2] described a similar response to sulfapyridine. And in 1940 Davidson and Bullowa[3] noted fever with chilliness, erythema, pruritus and conjunctival injection some hours after the administration of sulfamethylthiazole. As far as I am aware, such reaction has not previously been reported with sulfadiazine, presumably because this drug is the most recent addition to the group.

These reactions have been termed "hypersensitivity" or "acquired sensitivity" by most authors. Their nature is as yet unclear. Except for the case of Salvin, in which there was no history of previous ingestion, the early reactions have occurred on repeated administration of the drug, the first course being tolerated either without incident or with fever and rash after eight to nine days. Patch tests and passive transfer have generally been negative; eosinophilia has not been the rule. It is stated that an interval of at least nine days is required after the initial administration for a prompt reaction to appear on repeat dosage. And, on this basis, some consider these reactions to be identical in nature with the drug fever which occurs about the ninth day of continuous administration. As to the duration of the sensitivity, Gallagher[4] reports a febrile response to the administration of sulfanilamide two years after the original dosage, which had been well tolerated.

Although reports of early reaction are few, there is reason to believe that the condition is far from rare. In an important study, Lyons and Balberor[5] gave two courses of sulfathiazole to each of 49 patients. The first course was uniformly uneventful. However, on administration of the second course (on an average of eight to nine days after the first) 18 of the 49 patients had a prompt febrile reaction, and half of these had chills, weakness and exhaustion. That is, approximately one third of the patients receiving a sulfonamide drug were rendered so sensitive as to interfere with its subsequent administration. This is a fact of great practical importance, particularly in view of the finding that any one sulfonamide derivative may bring about sensitivity to the others of the group. In the case of Davidson and Bullowa the use of sodium sulfapyridine was followed by sensitivity to sulfapyridine and sulfamethylthiazole.

A case is reported of acquired sensitivity to sulfonamide drugs, including sulfadiazine, a case which exemplifies some of the problems already discussed.



Rise of temperature after administration of various sulfonamide derivatives.

REPORT OF CASE

History.—B. O., a white woman aged 62, was admitted to the hospital on Aug. 22, 1941 with a history of hemoptysis for one day. Seventeen years previously there had been a pleuritic pain on the right side. Nine years before there had been hemoptysis of one mouthful. At neither time did she obtain medical attention. In May 1940 a diagnosis of inactive pulmonary tuberculosis was made. There were no further symptoms until January 1941, when the patient began to have hematuria and some dysuria, for which she was readmitted to New York Hospital. The abnormal findings were related mainly to the genitourinary tract; a walnut sized tender nodule was found at the urethral orifice; the urine showed a faint trace of albumin and an occasional pus cell; culture revealed Escherichia coli communis; direct microscopic examination of the urine and inoculation of a guinea pig failed to reveal tubercle bacilli. The roentgenogram showed bilateral apical apparently healed pulmonary tuberculosis; three concentrates of the sputum were negative for that organism by microscopic examination. On the eighth day of hospitalization, cystoscopy revealed inflammation and purulent exudation at the trigone. The urethral caruncle was removed by means of a loop cautery. Postoperatively the temperature rose to 101.4 F., but it fell to normal on the fifth postoperative day. Beginning on that day sulfathiazole was administered for the persistent cystitis, 1 Gm. every four hours, until discharge three days later. During this time there was no temperature rise nor any other untoward reaction. The concentration of sulfathiazole in the blood was not measured. The patient asserted that following discharge from the hospital she noted no ill effects, and she remained asymptomatic until the small hemoptysis which occasioned the present admission. There was no past history of any allergy or of any contact with tuberculosis.

Physical Examination.—The patient was thin. She did not appear acutely ill, and the temperature was normal. The

From Bellevue Hospital, service of Dr. J. Burns Amberson.

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2. Thompson, A. R.: M & B 693 Rashes with Particular Reference to Exanthemata, Brit. M. J. **2:** 13 (July 1) 1939.
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5. Lyons, R. H., and Balberor, Harry: Development of Febrile Reactions During Second Course of Sulfathiazole, Univ. Hosp. Bull., Ann. Arbor **7:** 19 (March) 1941.

important abnormal findings were a few moist rales at the right pulmonary base and impairment of the percussion note below the left clavicle. Pelvic examination revealed slight inflammation at the urethral orifice.

Laboratory Examination.—A roentgenogram of the chest showed moderate fibrosis and emphysema, with blunting of the left costophrenic sinus and productive nodular infiltration with pleural thickening at the left apex. The urine showed a very faint trace of albumin and 60 to 75 white blood cells per low power field, many in clumps. The blood showed 3,500,000 erythrocytes per cubic millimeter, hemoglobin 11 Gm., leukocytes 7,600, polymorphonuclears 64 per cent, lymphocytes 31 per cent, monocytes 1 per cent and stab cells 3 per cent. The Wassermann reaction was negative, the sedimentation rate 42 mm. an hour. Sputum concentrates were microscopically negative for tubercle bacilli.

Course.—There was no hemoptysis after admission. The patient remained asymptomatic except for some urgency and frequency. The finding of pyuria together with the previous history led to the diagnosis of chronic cystitis and urethritis. Accordingly, on the eighth hospital day sulfathiazole was administered; 5 Gm. was given in the course of forty-eight hours. The day following the institution of this therapy the temperature rose precipitously to 103.6 and then to 104.4 F. At this time there were slight nausea and retching, moderate headache with "swimming" feeling in the head and pronounced malaise. Physical examination was not revealing. The urine was normal but for a very faint trace of albumin; the leukocyte count was 5,700 with 66 per cent mature and 29 per cent immature polymorphonuclear cells, 3 per cent lymphocytes and 2 per cent monocytes; there were no eosinophils. Urine culture revealed E. coli communis. The sulfathiazole was discontinued after a total of 5 Gm. had been given. Within twelve hours the feeling of "fulness and swimming" in the head, which had been the most distressing symptom, had cleared, and within two more days the temperature returned to normal. It was felt that we were dealing with a reaction to sulfathiazole by a patient who had previously not displayed such a reaction. The repeated administration of this and other sulfonamide drugs was planned in order to test the degree and extent of this sensitivity. The patient's subsequent course can best be summarized with the aid of the temperature chart.

On the twenty-second hospital day, in the presence of a normal temperature and leukocyte count, but with numerous leukocytes in the urine, sulfathiazole was again administered. A total of 4 Gm. was given. Six hours after the first dose the temperature abruptly rose to 102.2 F. During this and the following day, in which the temperature reached 103.8 F. and the leukocyte count 13,700 with 92 per cent polymorphonuclears and no eosinophils, the patient complained of headache and a "swimming" feeling in the head, nausea and vomiting, and she exhibited a morbilliform rash over the forehead. The blood showed 3.45 mg. of sulfathiazole per hundred cubic centimeters. On discontinuance of the drug the symptoms promptly disappeared and the temperature fell to normal on the third day.

On the thirtieth hospital day the administration of 2 Gm. of sulfathiazole was followed by an identical reaction after six hours. The blood showed 3.1 mg. of sulfathiazole per hundred cubic centimeters.

On the thirty-eighth hospital day 4 Gm. of sulfadiazine was administered in divided doses. Within eight hours there was a temperature rise to 101.2 F. and a reaction identical with the reactions previously noted but for the absence of rash. The blood showed 3.3 mg. of sulfadiazine per hundred cubic centimeters.

On the fiftieth hospital day 4 Gm. of sulfapyridine was administered in divided doses. The patient complained of nausea and vomiting of such severe degree that she refused further doses. But she did not have headache, a "swimming" feeling of the head or any rash, and she stated that she did not feel at all as she had felt after the previous drugs. There was no febrile response. The blood showed 5.1 mg. of sulfapyridine per hundred cubic centimeters.

On the sixty-fourth hospital day 10 Gm. of sulfanilamide was given in divided doses in the course of two days. After twenty-four hours the temperature rose to 101.2 F. and the patient manifested symptoms identical with those which had followed sulfathiazole and sulfadiazine except for the absence of rash. The blood showed 6.6 mg. of sulfanilamide per hundred cubic centimeters.

No further drugs were administered. The patient remained afebrile and asymptomatic and without change in the pulmonary status till discharge on the seventy-sixth hospital day.

SUMMARY

A case was observed of acquired sensitivity to sulfathiazole seven months after an initial course was tolerated without reaction. The sensitivity included sulfadiazine and sulfanilamide. Sulfapyridine was administered without similar reaction, but the prompt withdrawal of the drug precludes definite decision in this regard.

COMMENT

Prompt febrile reactions such as those described are not rare. Indeed, since many patients have been treated with sulfonamide drugs (often for minor ailments) it is likely that the reaction of acquired sensitivity will be seen with increased frequency. This is a matter of some importance and deserves investigation.

FATAL ANURIA FOLLOWING SULFADIAZINE THERAPY

C. ALEXANDER HELLWIG, M.D.
AND
H. LESTER REED, M.D.
WICHITA, KAN.

The literature contains reports on nearly 1,000 patients treated with sulfadiazine. Only 2 instances have been recorded in which urinary suppression followed the administration of this compound. In both cases cystoscopy and pelvic lavage promptly relieved the renal failure.[1]

In contrast to these clinical reports, which suggest a low toxicity of sulfadiazine, observations on experimental animals are less optimistic. Lehr and Antopol[2] found that, in albino rats, sulfadiazine may produce acute precipitation of the free acid in the renal tubules, and because of the poor solubility of the drug severe degeneration of the tubular epithelium may result.

Gross, Cooper and Hagan[3] gave sulfadiazine in different doses to mice and rats. Of 70 mice, 15 died following the medication. In one third of all the animals almost all collecting tubules were blocked by crystalline masses. In about one fifth of the animals crystals were found also in the convoluted tubules.

The following case of fatal anuria after sulfadiazine therapy which we observed at St. Francis Hospital is reported to emphasize the fact that sulfadiazine is not as harmless as the preliminary claims made for this new compound would suggest.

REPORT OF CASE

R. L. B., a white man aged 29, was admitted to the hospital Jan. 23, 1941 because of fever, cough and pain in the chest. He had been treated at home for two weeks and had received during the last three days 45 grains (3 Gm.) of sulfadiazine daily.

On admission the temperature was 99.6 F., the pulse rate 100 a minute and the respiratory rate 24. The leukocyte count was 9,000 per cubic millimeter and the hemoglobin content 18 Gm. per hundred cubic centimeters. The specific gravity of the urine was 1.020; the reaction was acid. Chemical tests

From the Department of Pathology, St. Francis Hospital.

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3. Gross, Paul; Cooper, F. B., and Hagan, M. L.: Urolithiasis Medicamentosa Caused by Sulfadiazine, Am. J. Clin. Path. **11:** 882, 1941.

for albumin, sugar and blood were negative. The sediment contained very few crystals of sulfadiazine.

The throat of the patient was red. Numerous coarse rales were audible over both sides of the lungs, especially over the right lower lobe. The patient received 15 grains (1 Gm.) of sulfadiazine every four hours. On the next day the leukocyte count was 12,800 per cubic millimeter with 16 per cent stab forms, 60 per cent segmented and 18 per cent lymphocytes. The temperature was 101.2 F. and the pulse rate 120. A roentgenogram of the chest showed mottled dense areas throughout the right lung and to a less extent also in the left lung, suggesting bronchopneumonia. The sputum contained many pneumococci. Attempts to type the organisms with the Neufeld method and after mouse inoculation were unsuccessful. In the sediment of the urine many red blood cells were present.

On January 27 an erythema appeared over the whole body. The urinary output during twenty-four hours was only 390 cc. in spite of intravenous administration of 2,500 cc. of fluid. The concentration of blood urea was 74 mg. per hundred cubic centimeters. Sulfadiazine was discontinued and the patient was referred for cystoscopic examination. No urine was found in the bladder. Both ureteral orifices were swollen and hemorrhagic. After the catheters were passed into the renal pelves dark brown urine was obtained. Both renal pelves were irrigated with warm distilled water. The first specimens obtained through the catheters had 250 mg. of sulfadiazine per hundred cubic centimeters.

On January 29 only a few cubic centimeters of bloody urine was voided. The temperature rose to 107 F., the pulse rate was 144 and the respiratory rate 36. Large liquid stools were passed and there was profuse sweating. The patient became comatose and died ten days after sulfadiazine therapy had been started, twenty-six hours after it had been discontinued.

The total amount of sulfadiazine given during the nine days was 360 grains (24 Gm.).

Necropsy was performed by one of us (H. L. R.). The pertinent findings were as follows:

The two kidneys were similar. The right kidney weighed 176 Gm., the left 210 Gm. The capsule stripped easily, leaving a smooth surface. The superficial blood vessels were dilated. The cortex was 8 mm. thick; the striations of the pyramids were unusually distinct. Fine, glistening, whitish stippling

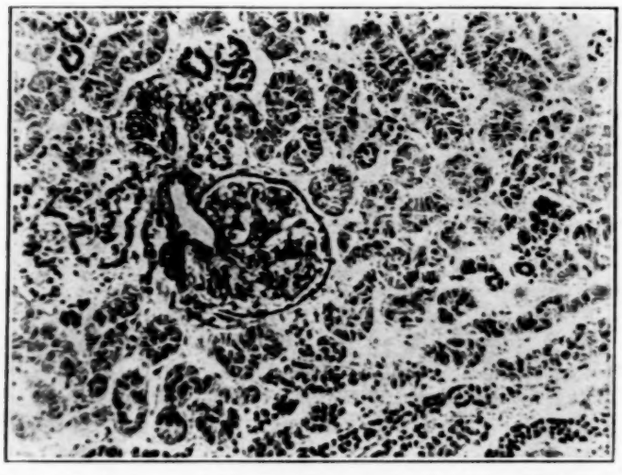

Fig. 1.—Section of a kidney in a case of fatal anuria following the use of sulfadiazine; severe degeneration of epithelium in convoluted tubules and in ascending limbs of Henle's loops (× 75).

was noted in the lower portion of the pyramids outlining the course of the collecting tubules. The renal pelves and the upper thirds of both ureters were completely filled out with dark coagulated blood. In the blood clots small whitish concrements of sulfadiazine were recognized. There were many petechiae in the mucosa of the pelves and ureters.

Microscopically most glomeruli appeared normal. In a few tufts capillary thrombi and small hemorrhages were found. The spaces of Bowman's capsules seemed slightly dilated and several contained granular, light blue stained, albuminous material. The basement membrane in most of the malpighian bodies was thin and the nuclei were well stained. There was widespread injury to the convoluted tubules (fig. 1). Their epithelial cells were swollen, many nuclei were unstained, the cytoplasm was vacuolated and stained deep red. Finest lipoid

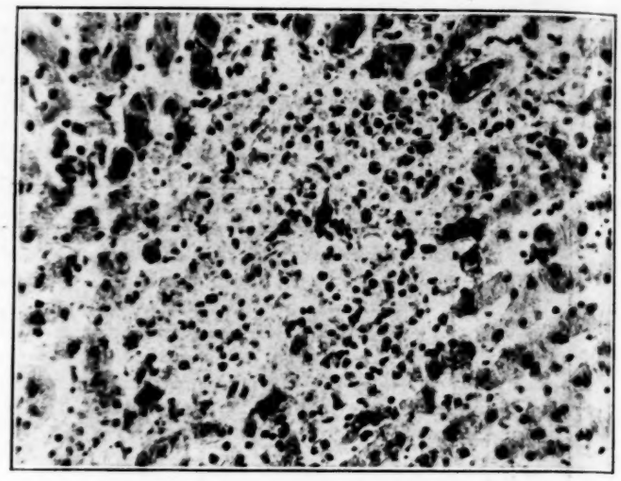

Fig. 2.—Focal necrosis in the liver following the use of sulfadiazine (× 75).

granules could be demonstrated in the tubular epithelium with Sudan stain. The descending limbs of Henle's loops appeared normal, while the thick ascending limbs showed the same severe cellular degeneration as the convoluted tubules. There were hyaline casts and occasionally crystals of sulfadiazine in the lumens of the convoluted tubules. Calcification of degenerated epithelial cells, as described by Lehr and Antopol in experimental animals after sulfadiazine medication, was absent in our case. While in most sections the collecting tubules were of normal structure, some of the terminal portions in the renal papillae showed cystic dilatation. There was desquamation of the epithelium and the lumens contained crystals of sulfadiazine.

The epithelium of the calices and of the ureters was destroyed in many places. Large hemorrhages were found in the subepithelial tissue and plasma cells, lymphocytes and leukocytes were numerous.

Microscopic examination of the liver revealed few small areas of necrosis of the liver cells with round cell infiltration. In the epicardium, edema and infiltration with leukocytes and plasma cells were noted. There was no evidence of interstitial myocarditis as observed by French and Weller[4] after the use of sulfonamide drugs.

The anatomic diagnosis was bilateral bronchopneumonia (pneumococcic); subacute pericarditis; focal necrosis of liver parenchyma; large spleen; severe degeneration of the epithelium of the convoluted tubules and ascending limbs of Henle's loops; cystic dilatation of the terminal portion of the collecting tubules; blood and sulfadiazine concrements in the renal pelves and ureters, and hemorrhagic pyelitis and ureteritis.

COMMENT

The histologic findings in our case are not in accord with the belief of most clinicians[5] that renal failure after sulfadiazine therapy is caused by mechanical blocking of the urinary passages and not by actual tissue damage due to toxicity of the drug. In our case, the most striking alterations were present in the convoluted tubules. The severe degenerative changes that we observed in the tubules were similar to those seen in mercuric poisoning. It is our contention, based on

4. French, A. J., and Weller, C. V.: Interstitial Myocarditis Following the Clinical and Experimental Use of Sulfonamide Drugs, Am. J. Path. **18**: 109, 1942.

5. Dourmashkin, R. L., and Worton, M.: Anuria Due to Complete Bilateral Ureteral Impaction with Concretions Following the Use of Sulfapyridine in Pneumonia, New York State J. Med. **41**: 146 (Jan. 15) 1941.

the histologic study of our case and on experimental observations of Lehr and Antopol, that sulfadiazine is a tubular poison and that anuria may follow the use of this drug not from interference with renal drainage but from degeneration of the tubular epithelium. Richards [6] pointed out that poisoning of the tubular epithelium permits water to pass back into the blood by simple diffusion. In this way complete anuria may follow the administration of a tubular poison though filtration in the glomeruli continues.

If our contention is correct, then we have to regard anuria following sulfadiazine as a much more serious complication than is generally believed. If the suppression of urine is caused not by simple mechanical blocking of the lower urinary passages but by damage of the tubular epithelium, lavage of the renal pelves and ureters may not relieve the anuria, as in our case.

SUMMARY

Death in the case reported was due to renal failure following sulfadiazine medication. The total amount of the drug given during nine days was less than 24 Gm. Cystoscopy with irrigation of the renal pelves and ureters, intravenous administration of fluid and alkalization were without success.

The kidneys showed severe degeneration of the convoluted tubules similar to that seen in mercuric poisoning. Our studies suggest that anuria following sulfadiazine may be due to actual tissue damage rather than mechanical blocking of the lower urinary passages.

It is not our intent in this report to discourage the use of sulfadiazine but to call attention to a possible toxicity of the drug to the renal epithelium.

Since lavage of the renal pelves and ureters will not relieve renal failure caused by tissue damage, prevention of renal complications cannot be overemphasized.

Careful attention to the daily urinary output of patients receiving sulfadiazine appears to be a simple and efficient method to prevent renal failure.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING STATEMENT.

AUSTIN E. SMITH, M.D., Acting Secretary.

HEXESTROL, NONPROPRIETARY DESIGNATION FOR DIHYDRODIETHYLSTILBESTROL

Bishop and his co-workers (*Lancet*, April 6, 1940, p. 629) have suggested that the synthetic estrogen dihydrodiethylstilbestrol may be of value as an estrogen. A pharmaceutical firm informed the Council's office that it contemplated the preparation of quantities of this substance for clinical trial, pointing out that the name suggested by Dodds for this compound is "hexoestrol" or, as the spelling would be in this country, "hexestrol."

Realizing the great value of timeliness in matters of nomenclature, the Council gave consideration to the matter of an acceptable name to forestall the development of several names or a name that might be otherwise unacceptable.

The Council has considered a number of proposed terms to signify the substance dihydrodiethylstilbestrol. These were considered unsatisfactory, nor could any other term be coined which possessed a root that would be more specific from a chemical standpoint for this compound than "hex-." Under these conditions the Council approved of the term "hexestrol" inasmuch as it has been the exclusive designation for this compound since it was first described.

6. Richards, A. N., quoted by Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, Baltimore, Williams & Wilkins Company, 1939, p. 617.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Acting Secretary.

CALCIUM GLUCONATE (See New and Nonofficial Remedies, 1941, p. 176).

The following dosage form has been accepted:

GEORGE A. BREON & COMPANY, INC., KANSAS CITY, MO.

Calcium Gluconate Solution 10% W/V: 10 cc. ampuls. Each ampul contains a sterile distilled water solution of calcium gluconate-U. S. P. 1.0 Gm., stabilized with calcium *d*-saccharate 0.02 Gm.

SOLUTION OF EPINEPHRINE HYDROCHLORIDE-U. S. P. (See New and Nonofficial Remedies, 1941, p. 254).

The following dosage form has been accepted:

GEORGE A. BREON & COMPANY, INC., KANSAS CITY, MO.

Solution Epinephrine Hydrochloride 1:1,000: 1 cc. ampul. A brand of solution epinephrine hydrochloride-U. S. P. containing chlorobutanol 0.5 per cent and sulfurous acid not more than 0.06 per cent in isotonic solution of sodium chloride.

PYRIDOXINE HYDROCHLORIDE (See THE JOURNAL, Jan. 10, 1942, p. 140).

The following dosage form has been accepted:

MERCK & CO., INC., RAHWAY, N. J.

Crystals Hexabione Hydrochloride: 0.05 Gm. and 0.1 Gm. sealed tubes.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1941, p. 519).

The following dosage form has been accepted:

MCNEIL LABORATORIES, INC., PHILADELPHIA.

Tablets Sulfathiazole: 0.5 Gm. (7½ grains).

LIVER AND STOMACH PREPARATIONS (See New and Nonofficial Remedies, 1941, p. 328).

REFINED SOLUTION LIVER EXTRACT PARENTERAL-LEDERLE (See THE JOURNAL, Nov. 15, 1941, p. 1706).

The following dilution dosage form has been accepted:

LEDERLE LABORATORIES, INC., PEARL RIVER, N. Y.

Refined Solution Liver Extract Parenteral, 5 U. S. P. injectable units per cc.: 5 cc. and 10 cc. vials.

MERCURIC SALICYLATE (See New and Nonofficial Remedies, 1941, p. 349).

The following dosage forms have been accepted:

THE LAKESIDE LABORATORIES, INC., MILWAUKEE.

Ampul Solution Mercuric Salicylate (in oil): 0.065 Gm. (1 grain), 0.097 Gm. (1½ grains), 0.13 Gm. (2 grains) in 1 cc. Each ampul contains mercuric salicylate U. S. P. suspended in vegetable oil containing 3 per cent chlorobutanol.

PERCOMORPH LIVER OIL (See New and Nonofficial Remedies, 1941, p. 577).

FLINT, EATON & COMPANY, DECATUR, ILL.

Oleum Percomorphum: 8 cc. bottle.

AMPULS OF CAMPHOR (See New and Nonofficial Remedies, 1941, p. 178).

The following dosage form has been accepted:

GEORGE A. BREON & CO., INC., KANSAS CITY, MO.

Ampuls Camphor in Olive Oil: 1 cc. Each cubic centimeter contains camphor 0.2 Gm. (3.08 grains) in olive oil q. s.

SODIUM CITRATE (See THE JOURNAL, June 7, 1941, p. 2597, and Revised Supplement to N. N. R., 1941, p. 26).

The following dosage form has been accepted:

LAKESIDE LABORATORIES, INC., MILWAUKEE.

Ampuls Sodium Citrate 2.5%: 50 cc.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 13, 1942

VITAMIN C AND WOUND HEALING

Many factors investigated in recent years, including vitamins, have been claimed to influence the healing of wounds. Attention has been drawn to vitamin C in particular because of the frequently noted fact that spontaneous breakdown of surgical wounds in the absence of infection occurs commonly in patients with cachexia and in young patients, especially those who have some congenital anomaly of the gastrointestinal tract. In all these groups of patients there is likelihood of deficiency of ascorbic acid. With the newer methods of estimating more accurately the ascorbic acid content of tissues, tests and experiments have been devised aimed at the accurate evaluation of the role of vitamin C in wound healing.

Lanman and Ingalls [1] in 1937 recorded observations on the behavior of wounds in guinea pigs under the influence of varied vitamin C content of tissues. They concluded that vitamin C plays an important part in the healing of experimentally produced wounds in guinea pigs and suggested that there may be in human beings a degree of vitamin C deficiency that cannot be recognized by ordinary methods of physical examination but which may be significant in this regard. These conclusions were later confirmed by Taffel and Harvey.[2] Now Bartlett, Jones and Ryan,[3] in studies based on experimental wounds in guinea pigs and on observations of healing wounds in human beings, clarify still further the part played by vitamin C.

For their animal experiments one group of guinea pigs was maintained on a scorbutic diet for two weeks. Then an abdominal incision was made and a control biopsy obtained. The scorbutic diet was continued postoperatively, and at arbitrary intervals varying from four to fourteen days the animals were killed and tissue assays done; however, a significant variation in the tissue levels at the shorter and longer postoperative intervals was not observed. Another group of 10 pigs was given a high ascorbic acid intake for a preliminary period of two weeks and submitted to similar operation and tissue assays at varying intervals. Again a significant difference in the results was not obtained at the shorter and longer postoperative intervals; however, a definite increase in ascorbic acid content of the healing wound over that of the control biopsy of the abdominal wall was found. In the final group of animals the tensile strength of the abdominal incision was determined and compared with the ascorbic acid content of the tissue. This was done by inflation of the peritoneal cavity with air until rupture of the wound occurred; the pressure necessary to produce rupture was recorded by a manometer in millimeters of mercury by a method similar to that used by Lanman and Ingalls. The ruptured wounds were then excised and the adjacent tissue was assayed for ascorbic acid content. Variations of ascorbic acid content could be demonstrated in a healing wound of the abdominal wall depending on the vitamin C intake. On a high ascorbic acid intake a striking increase in vitamin C content of the wound over that of the control biopsy occurred. Furthermore the tensile strength of wounds with a high content of ascorbic acid was demonstrated to be much greater than that of wounds with low vitamin C values.

Although the effect of prolonged reduced intake of vitamin C on wound healing in otherwise normal subjects has been studied before, the microscopic appearance of the wound alone was used as an index of abnormal healing. The human wound studies of Bartlett and his co-workers were undertaken in an attempt to obtain further information on this subject by means of direct observations on the tensile strength of healing wounds and to correlate these with the tissue content of ascorbic acid and the plasma levels of ascorbic acid. Six men subjected to repair of inguinal hernias, on whom the use of fascia lata in the repair was contemplated, were selected for study. During the preliminary preoperative period of two to four days the plasma ascorbic acid was determined and the daily urinary output measured. Throughout the hospital stay the patients were maintained on a diet containing 100 mg. of vitamin C daily. Supplementary ascorbic acid was given to some patients before and after operation. The wounds were allowed to heal for ten days, the skin sutures being removed on the eighth day. At the end of ten days the skin incision in the thigh was excised with a margin of slightly less than 1 cm. of skin on each side of the scar; incision in the fascia was excised with the same margin of tissue. The tensile strength of the healing wounds and the ascorbic acid content of the tissue were determined on the skin and fascia. This was measured by the application of a direct pull on the healing scar by means of a simple apparatus. As a result, however, of duplicate determinations of portions of the same skin and scars it became evident that there was considerable

1. Lanman, T. H., and Ingalls, T. H.: Vitamin C Deficiency and Wound Healing: Experimental and Clinical Study, Ann. Surg. **105:** 616 (April) 1937.

2. Taffel, M., and Harvey, S. C.: Effect of Absolute and Partial Vitamin C Deficiency on Healing of Wounds, Proc. Soc. Exper. Biol. & Med. **38:** 518 (May) 1938.

3. Bartlett, M. K.; Jones, C. M., and Ryan, A. E.: Vitamin C and Wound Healing: I. Experimental Wounds in Guinea Pigs; II. Ascorbic Acid Content and Tensile Strength of Healing Wounds in Human Beings, New England J. Med. **226:** 469 (March 19) 1942.

variation of tensile strength when measured by this method, and only gross differences should be considered significant. With the exception of 1 case, the Boston investigators could not find a significant variation in the behavior of the healing fascia regardless of the variation in the preoperative content of ascorbic acid in the plasma. With the 1 exception mentioned, the ascorbic acid contents of the control biopsies of fascia were fairly consistent. They believe, therefore, that the tensile strength of the specimens obtained from these 5 patients could be considered normal and that even a plasma ascorbic acid level as low as 0.2 mg. per hundred cubic centimeters (contrary to most previous opinions) would not cause a significant variation from normal in vitamin C content or tensile strength of healing fascia. The 1 exceptional case, however, demonstrates conclusively, they believe, two points: (1) that a sufficient depletion of vitamin C reflected in a low plasma ascorbic acid interferes with normal wound healing as measured by tissue ascorbic acid content and tensile strength, and (2) that normal wound healing can be brought about by adequate vitamin C therapy during the healing period in spite of a low plasma ascorbic acid at the time of operation.

These observations would seem to imply that under usual conditions of diet and absorption the average person possesses a high enough ascorbic acid content in tissue for normal wound healing. The practical question, however, is the determination, by a simple method, of which persons require supplementary vitamin C administration preoperatively or postoperatively. The answer to this question is not yet clear.

DEATHS OF PHYSICIANS IN 1941

Last year 3,527 obituaries of physicians were published in THE JOURNAL. Of the total 3,354 were residents of the United States and 173 of Canada. Two physicians died in Puerto Rico, 3 in the Philippine Islands, 2 in Hawaii and 1 in China. One was killed in West Africa while serving as captain in the British Army. The total group included 122 obituaries of women physicians.

Some obituaries are reported too late for publication and some are withheld for lack of suitable data with which to compile a satisfactory notice. Thus 241 more deaths were totaled in the American Medical Directory Report Service, including the United States, possessions and Canada, than were listed in 1941 in THE JOURNAL. A total of 3,460 is considered here for the United States alone or 106 more than the 3,354 deaths reported in THE JOURNAL.

For the academic year ended in June 1942 there were 5,275 graduates of medical schools in the United States. Deducting the number of physicians whose obituaries were published, there was an indicated net increase to the profession of 1,921. Including those who received their first license to practice medicine during the calendar year, there was a gain of 2,327. This difference is accounted for principally by graduates of foreign schools.

Age.—The average age at death of those classified as of the United States was 65.9 as compared with 66.3 years for a total of 3,450 deaths published in 1940. Thirty physicians died between the ages of 25 and 29, 42 between 30 and 34, 72 between 35 and 39, 102 between 40 and 44, 151 between 45 and 49, 210 between 50 and 54, 361 between 55 and 59, 459 between 60 and 64, 510 between 65 and 69, 518 between 70 and 74, 413 between 75 and 79, 299 between 80 and 84, 131 between 85 and 89, 50 between 90 and 94, 1 between 95 and 100, and 4 were 100 or over. The exact age of death was unknown in 1 case.

Causes.—Heart disease again accounted for the greatest number of deaths among physicians. As is customary, contributory causes have been included in the tabulation. Coronary thrombosis and occlusion led the list with 1,034 deaths. Other coronary diseases totaled 119. Other diseases of the heart and circulatory system accounted for 781 deaths. Four hundred and two were classified under cerebral hemorrhage and 353 under arteriosclerosis. Cancer and tumors in various forms accounted for 328 deaths. Tuberculosis was designated the cause in 39 deaths, diseases of the blood and lymphatic system in 35, diabetes in 56, bronchopneumonia in 197, lobar pneumonia in 58, other diseases of the respiratory system in 62, allergy and asthma in 5, appendicitis in 14, peptic ulcers (stomach or duodenum) in 26, other diseases of the gastrointestinal tract in 107, cirrhosis of the liver in 41, acute nephritis in 26, chronic nephritis (including cardiovascular renal and cardiorenal disease and uremia) in 219, diseases of the genitourinary system in 36, bacteremia and other infectious diseases in 39, influenza in 24, abscesses and carbuncles in 10, acute and chronic rheumatism in 6, diseases of the thyroid in 2, postoperative in 21, Addison's disease in 1, alcoholism in 3, poliomyelitis in 3, pulmonary embolism in 16 and other ill defined or unspecified causes and senility in 90. Each of the following accounted for 1 death: typhus fever, toxemia of pregnancy, tetanus and heat prostration. Two deaths were attributed to Rocky Mountain spotted fever.

Accidental Deaths.—There were 152 accidental deaths in 1941. Automobile accidents accounted for 83 deaths as compared with 105 in 1940. Other accidents were falls 21, burns 7, airplane accidents 6, drowning and poison 4 each. One death was recorded in a train accident, and 4 involved automobile and train collisions. Twelve unexplained fractures were included in the accidental deaths. One physician was killed when he fell down an elevator shaft, and another was electrocuted by a short circuit in an x-ray machine. One accidental death was ascribed to x-ray burns. Bullet wounds, carbon monoxide, explosions, overdoses of

medicine and asphyxiation were among the causes of accidental deaths classified in 1941 reports.

Suicides and Homicides.—Suicides accounted for 67 deaths in 1941. Bullet wounds led the list with 25. Carbon monoxide, poison and drugs were next in classification of method with 7 deaths each, hanging 6, cut artery 5, illuminating gas 3, drowning 1, and 1 death occurred from a fall. In 5 cases the method was not reported. Four homicides were recorded.

Civil Positions.—Among the decedents were 191 physicians who were or had been teachers in medical schools, 518 who had served in World War I, 57 veterans of the Spanish American War and 5 Civil War veterans. One hundred and twenty-three physicians were or had been health officers, 101 members of boards of education, 86 members of boards of health and 21 members of boards of medical examiners. There were 58 coroners, 44 mayors, 32 authors, 31 bank presidents, 17 editors and 17 legislators, 14 police surgeons, 13 missionaries, 12 dentists, 11 members of city councils, 9 pharmacists, 8 senators, 7 clergymen, 6 lawyers, 5 postmasters, 4 fire surgeons, 1 sheriff, 1 justice of the peace and 1 governor. One was a member of the U. S. Pharmacopeia and 1 was a member of the state board of agriculture. One had formerly served as a British vice consul.

There were 19 who had served in the regular medical corps of the U. S. Navy, 17 served in the regular corps in the U. S. Army, 19 in the U. S. Public Health Service, 7 in the Veterans' Administration and 4 in the Indian Medical Service.

Association Officers.—Among those who died, 1 had been President of the American Medical Association, 2 had been Vice President, 19 section officers and 4 members of councils. Thirty-nine had been members of the House of Delegates, 38 presidents of state medical associations and 4 secretaries. One hundred and eighty-seven were or had been presidents of county medical societies.

Current Comment

FOOD VALUE OF BEER

British opponents of the brewing industry, quick to take advantage of war conditions, have called attention to the fact that an appreciable percentage of all available English grain is now being used for the production of beer. They allege that this grain would be of greater social value if used for the raising of poultry or pigs. "Pigs versus beer" has thus become a current political slogan. The brewers of England [1] have countered by quoting experimental evidence previously published by nutritional experts of London University. Waller, for example, found that the food value of beer is more than half that of the grain and other material used in its production, while pig meat has less than one fifth the food value of the same materials if used in raising swine. Moreover, 25 per cent of the food value of the grain used in brewing is returned to the farmer in the form of brewers' grains, malt culms or yeast, foods especially high in vitamin content and nutritive value if used in the animal industry. The use of beer has also been under investigation by the food controller, who finds "no evidence that beer is doing anything to increase crime or bad health, or to reduce the output of munitions." From such testimony it is officially concluded by the British cabinet that "it is in the public interest that the production of beer should continue at the present amount" (4 per cent of all available grain).

1. Stone, M.: Am. Brewer **74**: 46, 1941.

THE FEDERAL TRADE COMMISSION

The annual report of the Federal Trade Commission for the year ended June 30, 1941 summarizes some interesting factual data concerning the work of this commission. The commission charged false and misleading representations in advertising and labels and otherwise in 219 complaints. Of these, 96 alleged false and misleading representations as to the therapeutic value of various medicinal and food preparations and devices; 22 alleged misrepresentations as to the potency, performance or results to be obtained by the use of various products, and 22 charged misrepresentation as to composition, quality, ingredients, instruction or condition, including alleged misrepresentation of old products for new. Summary of several charts indicates that in 1921, the commission disposed of 153 complaints, 116 of which resulted in orders to cease and desist, whereas in 1941 the commission disposed of 407 complaints, of which 348 resulted in cease and desist orders. In 1921 there were 14 lower court proceedings, only 2 of which resulted in a decision for the commission, whereas in 1941 there were a total of 35 decisions out of 44 in favor of the commission in the lower courts. In 1921 513 applications for complaints were disposed of, with only 156 resulting in actual issuance and none in stipulation to cease and desist, whereas in 1941 the commission disposed of 1,364 applications for complaints, which resulted in actual issuance of 332 complaints and 498 settlements by stipulations to cease and desist. During the past year the commission was also being requested to perform the same relative duties as in 1917 and 1918, when it made approximately 370 investigations of wartime costs, prices and profits covering such basic commodities as coal, steel and iron, building materials and cotton textiles. During the fiscal year reported, the commission aided the Office of Production Management and the Office of Price Administration. Other activities in connection with the national defense program included an investigation of price increases in the bread and bakery industry and an investigation in connection with the priorities orders in the steel industry. These added duties should not be permitted to lessen the diligence of the commission in executing its functions in the maintenance of honesty and fair trade in the more ordinary channels of commerce. The Federal Trade Commission has played an important part in the maintenance of the national economy and the national health, and the continuance of such activities is paramount to the welfare of the nation.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

DECONTAMINATION SERVICES

Operations Letter No. 42, dated May 20, 1942, presented here in an abridged form, sets forth the recommendations of the Office of Civilian Defense, Washington, D. C., for the organization and administration of decontamination services.

I. DECONTAMINATION OF PERSONS

The decontamination of persons is the responsibility of the Emergency Medical Service. Military authorities consider the use of gas against American cities unlikely. It is desirable, however, that key personnel be trained and that plans be prepared so that facilities can be improvised and placed in operation on short notice if necessary.

Decontamination stations should be of simple construction, with facilities for disrobing, bathing and chemical neutralization of agents that may have reached the skin. Wood is to be avoided because it absorbs mustard or lewisite and is difficult to decontaminate. Brick, concrete or metal structures are preferable. All porous materials, including brick and concrete, should be painted with sodium silicate paint. Gasoline filling stations are widely distributed in most communities and offer many advantages in view of their isolation, washing facilities and comparatively impervious construction.

The chief of Emergency Medical Service is responsible for organizing and training medical and other personnel to operate decontamination stations. Physicians and nurses must know (1) how to protect themselves while handling contaminated cases, (2) the effects of the various agents on the eyes, skin and respiratory tract, (3) measures for decontamination of skin and eyes at various stages after exposure. Stations for ambulant personnel do not necessarily need a physician in attendance, but the person in charge should understand the dangers and limitations of chemical decontamination. He should also be on the alert for victims with respiratory tract, eye or severe skin exposure, who should be transferred to a hospital as soon as decontaminated. All members of emergency medical field units should be trained and drilled in decontamination.

The chief of Emergency Medical Service may appropriately request the local health department to establish and staff facilities for decontamination of uninjured persons. Decontamination services organized and staffed by the health department for the decontamination of persons will operate as a branch of the Emergency Medical Service under the commander of the Citizens' Defense Corps.

II. DECONTAMINATION OF STREETS, BUILDINGS AND VEHICLES AND OF FOOD AND WATER SUPPLIES

The chief of Emergency Public Works has responsibility for organization, training and administration of decontamination squads. Their first task is rough decontamination of areas and of things in those areas. They will use equipment, especially street flushing machines, which presumably will be found in the public works department of the usual municipality.

Their first responsibility is the decontamination of streets, public buildings and the approaches thereto.

The inspection and testing for gas contamination and the decontamination of food and public water supplies is the responsibility of the municipal health department.

III. APPOINTMENT OF GAS OFFICERS

It is suggested that the commander of Citizens' Defense Corps appoint, as a member of his staff, a senior gas officer, who normally will be chosen from the city health department. His functions will be to supply technical direction and assistance with respect to action to be taken before, during and after gas attacks.

Duties of the Senior Gas Officer.—A. During the period of preparation: 1. He should become familiar with the chemistry of war gases and the technics and chemistry of decontamination. This information can be acquired from the Office of Civilian Defense publications and by attendance at the War Department civilian protection schools and at special schools being established by the medical division of the Office of Civilian Defense in cooperation with the U. S. Public Health Service and the War Department schools.

2. He should recommend for appointment assistant gas officers with qualifications similar to his own and train them to serve as his technical assistants to supervise decontamination of food and water.

3. He should, with the Chief of Emergency Medical Service, select the sites for decontamination stations and provide consulting and technical service in the design and construction of these facilities.

4. He should instruct laundries in the technics of handling various types of contaminated clothing and arrange for the safe transfer of contaminated clothing from decontamination stations to laundries and for the return of clean clothing. For this purpose, he may appoint a Laundry Officer from the trade in the city.

B. During the period of operation: The senior gas officer and his staff will be responsible for:

1. Identification of chemical agent or agents used in an area.

2. Determination of the extent of the area contaminated and advice to wardens and police in the vicinity concerning type of agent and extent of contamination.

3. Inspection and technical advice concerning the decontamination of streets and buildings and reports to the police and wardens when an area is safe for movement.

4. Inspection of food and water supplies and supervision of proper measures for their decontamination.

5. Collection and safe transportation to laundries of contaminated clothing and return of clean clothing to decontamination stations or hospitals (through laundry officer).

6. Inspection and technical control of decontamination of vehicles, equipment and machinery, including ambulances and other vehicles used in the transportation of casualties.

JAMES M. LANDIS, Director,
Office of Civilian Defense.

ADAPTING GASOLINE FILLING STATIONS FOR DECONTAMINATION

Persons contaminated with liquid vesicants must be treated within five minutes to avoid severe burns. Complete preparations would therefore require that facilities be sufficiently numerous so that every individual is within five minutes' walk of a decontamination station. Gasoline filling stations are widely distributed and may be adapted for this purpose.

The Office of Civilian Defense, Washington, D. C., has made the following suggestions for adapting gasoline filling stations for decontamination:

1. Use stations with washing and greasing facilities under cover.

2. Establish temporary disrobing area outside and adjoining washroom, shielded by canvas, parked automobiles or other device providing some privacy. Allow abundant natural ventilation. Every one entering disrobing area must walk through

a box of sand and bleaching powder to decontaminate his shoes (three parts of sand to one part of bleach containing 30 per cent hypochlorite).

3. Provide gas lock to washroom with foot bath of bleach slurry of sodium hypochlorite solution.

4. Install temporary showers or improvise pipe with several outlets for multiple bathing. Use hoses operated by attendants for washing large numbers of people. Supply soap.

5. Eyes should be irrigated with soda near entrance of washroom or hosed gently with plain water in the event of large numbers.

6. Use grease room for dressing.

7. Partition off grease room from washroom with wall board or other temporary material if the rooms are not already separated.

8. Provide a gas lock between wash and dressing rooms.

9. Use station office of the ladies' rest room for first aid if necessary.

10. It is advisable to ventilate wash and dressing rooms by means of ordinary cooling fans blowing out of window.

11. Supply numbered paper, burlap or cloth bags for each individual's clothing, and record name and address opposite number.

12. Keep contaminated clothing outside station and place bags of clothing in covered metal containers until decontaminated.

13. Provide supply of clean clothing of assorted sizes in dressing room.

14. Apply bleach, sodium hypochlorite solution such as chlorox or zonite, or peroxide as indicated for liquid contamination either in the disrobing or in the wash room.

15. It is advisable to paint wall board, wood, concrete or brick with sodium silicate paint to prevent persistent contamination.

16. Consult Office of Civilian Defense publications "Protection Against Gas" and "First Aid in the Prevention and Treatment of Chemical Casualties" for detailed instructions.

Decontamination of uninjured persons may be assigned by the chief of Emergency Medical Service to the local health department. Stations for decontamination of persons may be operated under the supervision of public health nurses where physicians are not available. Decontamination of food and water supplies should be assigned to the local health department.

JAMES M. LANDIS, Director.

PLANS TO COMBAT EPIDEMICS

Surg. Gen. James C. Magee has announced that the fifth meeting of the Army's civilian board of consultants on problems of communicable diseases has been concluded. Established in January 1941 by order of the Secretary of War on recommendation of the Surgeon General, the Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army consists of a central body of seven leaders in the fields of research on infectious diseases and epidemiology. These members, all of whom were present at this meeting, are Dr. Francis G. Blake of Yale University School of Medicine, Dr. O. H. Perry Pepper of the University of Pennsylvania Medical School, Dr. Alphonse R. Dochez of Columbia University College of Physicians and Surgeons, Dr. Ernest W. Goodpasture of Vanderbilt University, Dr. Kenneth F. Maxcy of the Johns Hopkins University School of Hygiene and Public Health, Dr. Andrew J. Warren of the Rockefeller Foundation and Dr. Oswald T. Avery of the Rockefeller Institute for Medical Research.

During the past year nine commissions have been organized and put into operation under the direction of the board. At the current meeting all directors of these commissions attended as follows:

Dr. O. H. Robertson, University of Chicago Medical School, Commission on Cross Infections in Hospitals.

Dr. M. H. Dawson, Columbia University College of Physicians and Surgeons, Commission on Hemolytic Streptococcal Infections.

Dr. Thomas Francis Jr., University of Michigan School of Public Health, Commission on Influenza.

Dr. Perrin H. Long, Johns Hopkins University School of Medicine, Commission on Meningococcal Meningitis.

Dr. Colin M. MacLeod, New York University College of Medicine, Commission on Pneumonia.

Dr. John R. Paul, Yale University School of Medicine, Commission on Neurotropic Virus Diseases.

Dr. Wilbur Sawyer, Rockefeller Foundation, Commission on Tropical Diseases.

Dr. Joseph Stokes Jr., University of Pennsylvania, Commission on Measles and Mumps.

Dr. Stanhope Bayne-Jones, Yale University School of Medicine, Commission on Epidemiological Survey.

Through the board and commissions the services of one hundred and sixteen consultants are available to the Surgeon General for advice and investigations on all problems of infectious diseases in relation to the health of the Army. The board and commissions carry out their work in direct association with the Preventive Medicine Service of the Surgeon General's Office. The meeting was attended also by representatives of all the services and many divisions of the Surgeon General's Office and by members of the staff of the Army Medical Center and the Army Medical Museum.

TUBERCULOSIS CASE FINDING IN DEFENSE INDUSTRIES

A photofluorographic unit for tuberculosis case finding in war industries has been assigned to North Carolina. A second unit is now being prepared for service in New Jersey.

Requests for the use of these units should be made through the state division of industrial hygiene to the Division of Industrial Hygiene of the National Institute of Health, Bethesda, Md. A waiting list will be maintained at headquarters and requests filled in order of receipt, consideration being given to the importance and location of the industry making the request.

Personnel accompanying each unit include a medical officer trained in interpreting 35 mm. films, a medical technician and a clerk. A portable condenser discharge x-ray machine has been added to the equipment, thus making it possible to obtain 35 mm. films in the absence of 400 milliampere x-ray equipment. The U. S. Public Health Service will maintain the equipment and furnish x-ray films and developing supplies, repairs and replacements.

At the end of each survey of a particular industrial plant, a statistical and narrative report on the extent and result of the survey will be sent to the state health officer and plant medical director, after clearing the Division of Industrial Hygiene, National Institute of Health, and the States' Relations Division, U. S. Public Health Service. The films will be retained as permanent records in the Office of Tuberculosis Control of the Public Health Service.

GENERAL PERSHING AND THE BALTIC SOCIETY

Members of the Baltic Society called at the quarters of Gen. John J. Pershing in Washington, D. C., May 28, to honor their former chief. In the group were Major Gen. James G. Harbord, Major Gen. Merritte W. Ireland, former surgeon general of the Army, Major Gen. Walter Bethel, Cols. George C. Adamson and Ray T. Middleton, Capt. Charles B. Shaw and Sergts. Harry Cooper and Louis A. Beaman. General Harbord, in presenting a walking stick to General Pershing, said "As commander in chief of the American Army in France, you stood like a rock for the inimitable principles of war, unchanging through the ages. Through all the claptrap and gabble of postwar years your dignity has not been touched by intrigue or cheapened by futile striving. You still stand to us as a symbol of victory and personification of constant faith."

The Baltic Society is composed of the members of the original party which sailed to France with General Pershing on May 28, twenty-five years ago.

INVESTIGATIONS OF DERMATOSES

The first meeting of the Consulting Staff of the Dermatoses Investigations Section of the National Institute of Health was held on April 20-21. Members of the staff are Dr. Paul A. O'Leary, Rochester, Minn., chairman; Dr. Samuel M. Peck, New York; Dr. S. William Becker, Chicago; Dr. Howard Fox, New York; Dr. Richard L. Sutton Jr., Kansas City, Mo., and Dr. Harry J. Templeton, Oakland, Calif. Dr. O'Leary was unable to be present, and Dr. Fox was selected temporary chairman. Notable among the many matters discussed by the consulting staff were the definition of a primary cutaneous irritant and the definition of a cutaneous sensitizer. The staff agreed with the plan devised by this section for testing new fabrics, finishes, dyes and cosmetics as to their possible skin irritating properties before selling them to the public. It also endorsed the plan of giving a special course on occupational dermatoses to dermatologists located in various parts of the country, so these physicians in turn can teach the subject to dermatologists in their locality and thus make available to our war industries physicians trained in occupational dermatoses. Such physicians are now badly needed to prevent and treat dermatoses—which make up approximately two thirds of all occupational diseases—among the workers in our war industries.

GAS DEFENSE AND DECONTAMINATION COMMITTEE

Prof. W. L. Beuschlein of the chemical engineering department of the University of Washington in Seattle has been appointed chief of the decontamination service in Seattle. Professor Beuschlein first will establish a decontamination center where five hundred volunteers for this work will be trained. This number will be recruited from students and graduates of the university. Additional decontamination centers are planned for each one of the seven defense zones of Seattle.

The Plainfield, N. J., Defense Council has made appropriations for gas decontamination and casualty depots to be located on the athletic field at the high school, where the field houses will be remodeled and equipment installed to handle possible gas casualties.

Three thousand five hundred air raid wardens in Hartford, Conn., have been trained to recognize and deal with the war gases. The chairman of the Emergency Public Works Committee of the Hartford Defense Council has appointed a committee which will survey Hartford's equipment and needs in case of gas attack.

PROTECTION OF INDUSTRIAL PLANTS AGAINST AIR RAIDS

About twelve hundred representatives of management and labor in Detroit industrial plants and factories attended an institute held at the Rackham Memorial Building, Detroit, May 21, and were expected to meet twice a week for the following three weeks, under the sponsorship of the Detroit Industrial Safety Council in cooperation with the Office of Civilian Defense. The purpose of the instruction was to outline a practical operating plan to protect industrial plants against possible air raids. The city health commissioner, Dr. Bruce H. Douglas, Lieut. Bernard A. Preo, bomb specialist of the police department, A. S. Moreau, director of the Detroit chapter of Red Cross, and Edwin C. Denstaedt, communications controller of the Office of Civilian Defense, were among the speakers.

SOUND FILMS ON THE EMERGENCY MEDICAL SERVICES

A series of sound slide films on the emergency medical services is being developed by the medical division of the Office of Civilian Defense and when completed will be shown throughout the country and used as illustrative material for lectures on emergency medical technics. The films are being made at Mount Vernon, N. Y., where with the cooperation of various officials the workings of the Mount Vernon emergency medical services is being filmed.

LONG BEACH INSTRUCTS FORTY THOUSAND IN AIR RAID PRECAUTIONS

A three day educational program in the form of a play entitled "It May Happen Here," enacted by volunteer members of the Emergency Medical Service and the Community Players, was presented in May at the Long Beach Municipal Auditorium and was attended by more than forty thousand persons. Doctors, nurses and Red Cross personnel acted out the training program under conditions simulating air raids. The program on medical preparedness was arranged by Dr. Robert W. Wilcox, chief of the Emergency Medical Service for Long Beach, and the exhibits in various fields of civilian war effort were demonstrated under the arrangements of Dr. Fred B. Clarke. Stanley K. Cochems, who wrote and directed the play, was master of ceremonies and was borrowed from the Los Angeles County Medical Association to put on the play.

EMERGENCY MEDICAL FIELD SETS

At the recent annual meeting of the Medical Society of the State of New York in New York City, the medical director of the Medical and Surgical Relief Committee of America, Dr. Joseph P. Hoguet, presented an emergency medical field set to the research director of the New York State Health Preparedness Commission, Dr. John J. Bourke, who turned it over to Dr. Louis Bauer, chief of emergency medical services of the Nassau County War Council, for use at Mitchell Field. The Medical and Surgical Relief Committee aims to carry on a nationwide drive to provide sufficient emergency medical field sets to the medical directors of civilian defense areas throughout the country. Each emergency set contains two portable cases completely equipped with instruments and supplies in accordance with specifications of the Office of Civilian Defense. The sets are to be placed in first aid posts and hospitals, from which they can be readily carried to points of disaster.

TRAINING IN CHEMICAL WARFARE AND GAS PROTECTION

The New York State Health Preparedness Commission, following meetings at the New York Academy of Medicine, has formulated a program of instruction which will be available to all physicians in the state for training in the medical aspects of chemical warfare and gas protection technics. The chairman of the Health Preparedness Commission has appointed Dr. David D. Rutstein, chief of the Cardiac Bureau of the State Department of Health, as deputy medical officer for gas protection in the emergency medical services. Physicians who have taken the courses will then instruct other physicians throughout the state.

PLANS TO PREVENT SABOTAGE OF WATER SUPPLIES

Every city and village in Wisconsin was invited to send representatives to a special water works school to be conducted at the University of Wisconsin, May 12-13, for instruction in the prevention of sabotage in making emergency repairs of damage resulting from enemy action. The course was arranged by the Wisconsin State Board of Health, the Wisconsin section of the American Water Works Association, the League of Municipalities and the university.

CHECK ON EFFECTS OF ARMY TRAINING

The War Department announced on May 25 that about twenty thousand enlisted men will be retested to determine the effect of training on a soldier's score in the general classification test. This test, which is given to every man on induction into the service, is designed to test his ability to learn and not his educational background. Its chief object is to serve as a guide to classification officers in assigning men to work and organizations for which they are best qualified. About five thousand of the enlisted men will be retested at replacement training centers prior to their assignment with field forces. This will afford a check on the effect of training given at replacement training centers.

ORGANIZATION SECTION

WOMAN'S AUXILIARY

California

At the February meeting of the Alameda County auxiliary Miss Beatrice Carpenter of the California Dairy Council spoke on nutrition. Carol Mills, violinist, played several solos. Heretofore auxiliary members have been working in the various departments of the Red Cross. The auxiliary now has several of its own units. Sixty members are in the first aid class, which is under the instruction of Drs. Dorothy M. Allen and Helen Snook. A Red Cross sewing unit, with twenty members, is sewing one day a week under the direction of Mrs. Kenneth Neilson and Mrs. W. W. Cross.

In January, Capt. M. D. Willcutts, M. C., of the Naval Hospital, addressed the San Diego auxiliary on the blood bank. The auxiliary is working with the San Diego Medical Association in establishing a blood bank in San Diego for civilian defense. Mr. Quon, Chinese lecturer, spoke on "America's Position in the Pacific." He ended his talk with a reading of the new Chinese national anthem.

Nearly all the membership of the San Francisco auxiliary is engaged in some activity with national defense. On Christmas day many members did valiant work when many evacuees reached San Francisco. They spent hours on the docks waiting to transport people to hotels, hospitals and the various clubs which had facilities to receive them. Many of the members are taking instruction in first aid and attending nutrition classes, while others in the mobile canteen go out in station wagons to feed soldiers who are guarding different parts of the city.

Members of the San Francisco auxiliary recently responded 100 per cent in entertaining men in the service at the San Francisco Hospitality House. At least one thousand men were served sandwiches, doughnuts and coffee. In the afternoon, daughters of members acted as junior hostesses and helped to entertain by dancing and playing cards. In the evening the girls from the training schools of Stanford and of the University of California acted as hostesses. Proceeds from a previous bridge party were sent to the California and Stanford universities as a loan fund for senior medical students.

Delaware

Mrs. Erwin L. Stambaugh of Lewes was elected president of the woman's auxiliary to the Medical Society of Delaware at the annual meeting recently and assumed office on Jan. 1, 1942 for a two year term. Other officers elected are vice president for New Castle County, Mrs. George C. McElfatrick; vice president for Kent County, Mrs. I. W. Mayerberg of Dover; vice president for Sussex County, Mrs. James Beebe of Lewes; recording secretary, Mrs. Sylvester W. Rennie of Wilmington; corresponding secretary, Mrs. Lawrence Fitchett of Milford; treasurer, Mrs. Albert J. Strikol of Wilmington.

Indiana

Forty-six hundred people heard Dr. W. W. Bauer, director of the A. M. A. Bureau of Health Education, during his lectures in Fort Wayne recently, sponsored by the woman's auxiliary to the Allen County Medical Society. "Popular Beliefs That Are Not So" was the subject of his lectures to the pupils of the three public high schools, and at the regular meeting his topic was "The Doctor's Wife." The evening meeting was preceded by a dinner given in the Old Fort Room at the Indiana Hotel, at which time Dr. Bauer spoke to the guests who were members of the auxiliary board of directors and their husbands, the physicians of the auxiliary advisory council and the executive board of the Fort Wayne Medical Society and their wives.

The Lake County auxiliary has decided to do Red Cross sewing every other Tuesday in the home, with two members acting as hostesses.

Miss Mary Sinclair, assistant director of woman's activities for the Indiana Defense Council, talked on "Women in Defense" before the Marion County auxiliary in January.

The Porter County auxiliary met in Valparaiso on January 27; Mrs. G. R. Douglas talked on "The Philippines."

In January the Vigo County auxiliary held the annual guest dinner in the Student Union Building of the State Teachers College. Dr. Hazel Pfennig talked on her trip to South America.

Kansas

The Woman's Auxiliary to the Sedgwick County Medical Society voted to cancel the February guest day tea and substitute a war relief donation of $25 to the Red Cross as a part of the auxiliary program. Plans for organizing a Red Cross unit within the auxiliary are being considered. Mrs. W. J. Kiser, Hygeia chairman, announced that more than one hundred subscriptions had been placed.

Mississippi

At the December meeting of the Northeast Mississippi Thirteen Counties Auxiliary, at which Dr. and Mrs. Henry Boswell were guest speakers, the members made a contribution to the work of the preventorium. The meeting was held at the home of Mrs. V. B. Philpot of Houston. Mrs. Boswell spoke on "Objectives and Its Accomplishments of the Auxiliary" and Dr. Boswell on "What the Auxiliary Means to Doctors and Some of the Capacities in Which It Can Serve."

New Jersey

The Atlantic County's new welfare project is to aid financially a student nurse in the training school of the Atlantic City Hospital. In March 1942 candidates' names from the various high schools will be submitted to the Nurses Committee which will give each candidate consideration and in June, on graduation from high school, the student will be selected. The student will enter the training school in September 1942. The stipulated amount to be lent the candidate is $200 for her three year period of training. A gift of $25 will be given the nurse by the auxiliary on her graduation from the training school. The Medical Preparedness Committee has been actively engaged in collecting instruments, drugs and samples and in assisting physicians.

To assure sufficient funds to pay the tuition and maintenance of the student nurse whom the Burlington County auxiliary sends through training school (Burlington was the first county in New Jersey to do this), every member has been urged to guarantee a $4 table at a large card party. The auxiliary is making and sending thousands of cookies to Fort Dix each week, and many members of the auxiliary serve as hostesses at the fort.

West Virginia

The McDowell County auxiliary met on February 12 at Welch. Mrs. H. P. Evans, president, presided. Mr. Joe Savage discussed the method being used to assign doctors for service with the armed forces.

The Parkersburg County auxiliary met on January 13 with Mrs. A. C. Woofter, presiding. Miss Frances Inslee reviewed Victor Heiser's book "You're the Doctor." Mrs. James L. Wade discussed procurement and assignment service for the medical profession. At the auxiliary meeting, February 10, Miss Margaret Joseph, dietitian for St. Joseph's Hospital, spoke on "Diet in Defense and the Mobile Kitchen." Going "all out for defense," auxiliary members plan no more luncheon sessions for the duration. Members contributed books for the victory book drive and voted to give ten subscriptions to *Hygeia* to the schools of the county.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

State Medical Election.—Dr. Samuel J. Allbright, Searcy, was named president-elect of the Arkansas Medical Society at its recent annual session in Hot Springs National Park. Dr. Rufus B. Robins, Camden, was inducted into the presidency and Dr. William R. Brooksher, Fort Smith, was reelected secretary. The next annual meeting will be in Little Rock, the dates to be determined later.

District Meetings. — The North East Arkansas Medical Society was addressed at Tyronza, May 7, among others, by Drs. William H. Anderson, Booneville, Miss., on "Problems and Progress in Medicine"; Henry King Wade, Hot Springs, "Pyelitis"; Charles H. Lutterloh, Hot Springs, "Problems of Arthritis"; Francis W. Carruthers, Little Rock, "Treatment of Fractures of the Forearm," and Silas C. Fulmer, Little Rock, "Clinical Syndromes of Coronary Artery Disease."——At a meeting of the Second District Medical Society in Searcy, April 13, Drs. Henry E. Mobley, Morrilton, and John N. Compton, Little Rock, spoke on "Surgical Emergencies" and "Generalized Diagnosis" respectively.

CALIFORNIA

Physicians Wanted.—The Los Angeles County Civil Service Commission announces positions open as physician and assistant physician at Olive View Sanatorium, San Fernando. To be eligible, an applicant should be between 21 and 55 years of age, a graduate of an approved medical school who has a completed one year internship in an approved hospital. Applications should be filed on or before June 16.

Society News.—The Alameda County Medical Association was addressed, May 18, by Drs. Edward G. Ewer on "The Treatment of Femoral Neck Fractures by Nailing"; Douglas D. Dickson, "Ankle Fractures," and Leonard B. Barnard, "Advances in the Treatment of Poliomyelitis." All are of Oakland.——Dr. Lawrence K. Gundrum, Los Angeles, discussed "Effect of the Newer Sulfonamides on the Nasal Mucosa of Rabbits" before the San Diego County Medical Society, May 12.

Personal.—The University of California recently conferred the honorary degree of LL.D. on Dr. Langley Porter, dean emeritus of the university's school of medicine, San Francisco. ——Dr. John H. Lawrence, assistant professor of medicine, University of California Medical School, Berkeley, has been awarded an honorary degree of doctor of science at the University of South Dakota, Vermilion, for "successful therapeutic use of radioactive phosphorus to produce remissions in leukemia in man and for his development of the medical applications of neutrons and artificially radioactive elements."

Dr. Legge Retires as Professor of Hygiene.—Dr. Robert T. Legge announces his retirement as professor and chairman of the department of hygiene at the University of California, Berkeley, with the title professor emeritus after twenty-eight years' service at the university. Dr. Legge was born in San Francisco in 1872. He received his degree in medicine at California in 1899 and joined the university faculty in 1915. Dr. Legge is also lecturer on industrial medicine at the University of California Medical School in San Francisco and director of the Ernest V. Cowell Memorial Hospital at the university, Berkeley. He is a member of the Council on Industrial Health of the American Medical Association.

DISTRICT OF COLUMBIA

District Society Election.—Dr. Fred R. Sanderson was chosen president-elect of the Medical Society of the District of Columbia at its meeting, May 6. He will take office on July 1, 1943. Dr. Andrew Magruder MacDonald, district coroner, will take office as president of the society on July 1. Other officers chosen to take office this coming July are Drs. Thomas S. Lee and Alma J. Speer, vice presidents.

Personal.—Watson Davis, director of Science Service, was presented with the award of the American College Publicity Association at its meeting, May 9. According to *Science*, Mr. Davis was cited for his "Years of faithful interpretation of research in science and its translation into terms understandable to the reading public with no loss of dignity or essential meaning."——Dr. George W. Creswell has been appointed a special consultant in the division of venereal diseases, U. S. Public Health Service.

IDAHO

Society News.—Dr. George W. Holmes, Boston, addressed the Southwestern Idaho Medical Society recently in Boise on "Obstructive Lesions of the Bronchi."——Dr. Richard P. Howard, Pocatello, presented a review of ulcerative colitis before the Pocatello Medical Society, April 2, and Dr. Carroll W. Dewey, Fort Hall, presented a patient aged 10 years with interstitial emphysema.

Annual Registration Due July 1.—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to register annually on July 1 with the Department of Law Enforcement and at that time to pay a fee of $2. If a licentiate has not paid the annual registration fee by October 1, his license can be canceled but will be restored within five years thereafter on payment of the delinquent fees and a $10 penalty. If a license has been canceled for more than five years, it can be reinstated only on the payment of $25 and on the licentiate's passing an examination, the nature of which shall be determined by the Department of Law Enforcement.

ILLINOIS

Physician Cited for Bravery in Java.—Major Leon E. Robinson, Aledo, now stationed with the medical staff of the headquarters, U. S. Army forces in Australia, has been cited for outstanding performance of duty under fire in the campaign in Java, newspapers reported on May 20. The citation from Col. E. L. Eubank, of the army air corps, commended Major Robinson for his "splendid performance of duty while serving as senior medical officer of the nineteenth Bombardment group during the recent campaign in Java."

Changes in Hospital Superintendents.—Dr. Edward F. Ross, managing officer of Alton State Hospital, Alton, has been named to a similar position at the Manteno State Hospital, Manteno, succeeding Dr. Walter H. Baer, who resigned to enter military service. Dr. Alfred P. Bay, assistant managing officer of Alton, has been named in charge. Dr. Edward A. Welch, chief medical officer of the Veterans Administration Facility at Excelsior Springs, Mo., has been placed in charge of the new $1,500,000 veterans' hospital near Marion.

Chicago

Dr. Newton Named Chairman of Chemical Section.—Roy C. Newton, Ph.D., vice president in charge of the research laboratories of Swift & Company, has been elected chairman of the Chicago Section of the American Chemical Society. He will assume the position July 1. Dr. Newton received his degree of doctor in philosophy at the University of Chicago in 1924. He has been with Swift & Company since 1924.

The Jessie Horton Koessler Fellowship. — The Jessie Horton Koessler Fellowship of the Institute of Medicine of Chicago, for the aid of research in biochemistry, physiology, bacteriology or pathology, will be available on September 1. The stipend is $500 a year with the possibility of renewal for one or two years. Only such applications will be considered as are approved by the head of a department in the fields mentioned or by the director of a research institute or laboratory in Chicago and which stipulate that the recipient of the fellowship shall be given adequate facilities for carrying out the proposed research, concerning which full information is required in the application. Applications will be received up to July 1 and should be sent to Dr. H. Gideon Wells, 950 East 59th Street, chairman of the committee on the Jessie Horton Koessler Fund. Since there are no formal blanks, application should be made by letter.

Blood Grouping Tests Upheld in Illinois Paternity Case.—On March 15 newspapers reported the annulment of a marriage on evidence of blood tests that excluded the husband as the father of his wife's child. The annulment was granted to the husband on the ground of fraud, the judge holding that the young man was wrongfully induced to marry his wife on her claim that he was the father of her child now 1 year old. The newspaper stated that the case is the first in Illinois in which a court has voided a marriage on complaint of paternity fraud, with blood tests serving as proof. With the consent of attorneys, Judge Harrington appointed Drs. Josiah J. Moore and Benjamin H. Neiman to make blood tests. Both physicians indicated in their reports that the husband in the case

could not be the father of the child. Included among the states that have passed legislation recognizing blood grouping tests for paternity are New York, Wisconsin, Maine, Ohio and New Jersey.

INDIANA

New District Health Unit.—Dr. John D. Winebrenner, Princeton, has been named director of the newly created district health department number five, with offices in Columbus. The district includes Bartholomew, Johnson, Shelby, Jackson and Decatur counties.

Physician Interned by Japanese.—The Steuben County Red Cross has been notified that Dr. Lawton E. Shank, Angola, has been interned by the Tokyo government, newspapers reported on May 18. Dr. Shank, who is said to have been on Wake Island when the Japanese attacked, graduated at the Indiana University School of Medicine, Indianapolis, in 1938.

Personal.—Dr. Henry Vernon Madsen, Richmond, has been appointed superintendent of Smith-Esteb Memorial Hospital, Richmond, succeeding the late Dr. James R. Cooper.——Dr. Paul D. Williams, assistant superintendent of the Logansport State Hospital, has been appointed medical superintendent of the Richmond State Hospital, effective April 1. He succeeds Dr. Paul S. Johnson, who resigned to enter private practice.

IOWA

Spotted Fever Vaccine Available.—The Rocky Mountain Laboratory of the U. S. Public Health Service, Hamilton, Mont., has given the Iowa State Department of Health, Des Moines, a supply of spotted fever vaccine, prepared from the chick embryo by the method of Herald R. Cox, Sc.D., Hamilton. Vaccine for active immunization of children and adults at the Tama Indian Reservation was forwarded by the state department of health and administered by Drs. Ira D. Nelson and Arthur A. Pace of the Indian Service at Toledo. The department is prepared to furnish vaccine free of charge in response to requests from physicians for immunization of persons subject to frequent exposure to the common dog tick.

KANSAS

Society Appoints Executive Secretary.—Mr. R. W. Callahan, who has been assisting the Shawnee County Medical Society in its medical care program for the indigent, has been appointed executive secretary for the society with offices at 311 National Reserve Building, Topeka.

Changes in Health Personnel.—Dr. Donald E. Bux, Manhattan, has been appointed full time health officer of Cherokee County, with offices in Columbus, succeeding Dr. Joseph W. Spearing, who resigned to become medical director of the Kansas Ordnance Plant at Parsons.

Institute for Psychoanalytic Training.—The Topeka Psychoanalytic Society will establish a Psychoanalytic Training Institute, according to the Bulletin of the Shawnee County Medical Society. Approval of the proposed institute was given by the American Psychoanalytic Association at its meeting in Boston recently.

New State Health Officer.—Dr. Floyd C. Beelman has been appointed secretary and executive officer of the state health department of Kansas, according to the *Registrar* for April 15. He succeeds Dr. Fred P. Helm, who has been doing postgraduate work at Johns Hopkins University, Baltimore, under a leave of absence. Dr. Beelman had been serving as acting secretary until the recent appointment.

KENTUCKY

State Board Activities.—A $125,000 three story addition to the state board of health will soon be started, newspapers reported on May 7. It is hoped that the structure will be completed by October. Plans have also been announced for the expansion of the state bureau of industrial hygiene providing for additional personnel and laboratory equipment.

Changes in Health Officers.—Dr. Paul Q. Peterson, Hardinsburg, has been transferred from his position as health officer of Hancock County to a similar position in Warren County. Dr. Everett A. King, formerly of Fort Wayne, Ind., captain, U. S. Public Health Service, has taken over the work of the health officer in the Tri-County Unit composed of Hancock, Breckenridge and Meade counties. Dr. Peterson will succeed Dr. Lewis Fine, Bowling Green, who is retiring from the work because of ill health.—Dr. Nicholas A. James, Tell City, Ind., is the new health officer of Perry County, it is reported.

MAINE

Annual Meeting of Medico-Legal Society.—The Maine Medico-Legal Society will hold its annual meeting at the Poland Spring House, Poland Spring, June 23. One session will be devoted to a discussion of legal angles of the medical examiner system. Dr. Joseph E. Porter, Portland, will address the meeting on "Medicolegal Aspects of Coronary Occlusion" and Dr. Alan R. Moritz, Boston, will discuss "Forensic Pathology."

MARYLAND

State Medical Election.—Dr. Charles R. Austrian, Baltimore, was elected president of the Medical and Chirurgical Faculty of Maryland at its meeting in Baltimore on April 29. He will be inducted into office on January 1. The next annual session will be held in Baltimore, April 27-28, 1943.

Annual Health Conference.—The twenty-second annual health conference of the state department of health was held at the Longfellow Hotel, Baltimore, May 15-16. Included among the speakers were Dr. Allen W. Freeman, "A Public Health Program in Wartime" and Miss Marjorie M. Heseltine, consultant in nutrition, U. S. Children's Bureau, Washington, D. C., "Nutrition in Wartime." One session was devoted to a symposium on venereal diseases with the following Baltimore physicians:

Dr. Joseph Earle Moore, consultant in venereal diseases, state department of health.

Dr. Ferdinand O. W. Reinhard, director of the bureau of venereal diseases, Baltimore City Health Department.

Dr. Nels A. Nelson, deputy state health officer, state health department.

Dr. Edgar W. Norris Jr., surgeon, U. S. Public Health Service, liaison officer, Third Corps Area, U. S. Army.

Dr. Albert F. Doyle, venereal disease control officer, Third Corps Area, U. S. Army.

Dr. Thomas B. Turner, professor of bacteriology, Johns Hopkins School of Hygiene and Public Health.

There was also a round table discussion on the public health nurse as a teacher of home nursing on Saturday morning, May 16.

MASSACHUSETTS

Dr. René Dubos Appointed Professor at Harvard.—René Jules Dubos, Ph.D., member of the Rockefeller Institute for Medical Research, New York, has been appointed George Fabyan professor of comparative pathology and professor of tropical medicine at Harvard Medical School, Boston. He succeeds Dr. Ernest E. Tyzzer, who becomes professor emeritus. Dr. Dubos was born in France in 1901. He studied at the Institut National Agronomique, Paris, 1919-1921. He came to the United States in 1927 and became a naturalized citizen in 1938. He was instructor in bacteriology at Rutgers University, New Brunswick, N. J., from 1925 to 1927, when he became assistant at the Rockefeller Institute for Medical Research, serving there in this capacity until 1930. He was associate at the institute from 1930 to 1938 and associate member from 1938 to 1941 when he became a member. In 1940 Dr. Dubos received the John Phillips Memorial Award of the American College of Physicians and in 1941 the Mead Johnson Award of the American Academy of Pediatrics, in recognition of his development of gramicidin. Dr. Tyzzer graduated at Harvard in 1902 and joined the faculty the following year.

MINNESOTA

Institute for Human Genetics.—The Charles Fremont Dight Institute for the Promotion of Human Genetics is now in operation at the University of Minnesota, Minneapolis, according to the *Bulletin* of the Hennepin County Medical Society. Clarence P. Oliver, Ph.D., of the department of zoology, is in charge. Under the will of the late Dr. Dight, the income of a fund of more than $100,000 was bequeathed to the university to endow the institute. Studies will be directed particularly at present to "a search for traits, such as metabolic disturbances, which may have genetic bases but are not recognized as hereditary traits." Dr. Dight once served on the staff of the University of Minnesota Medical School.

MISSOURI

State Medical Election.—Dr. Andrew W. McAlester Jr., Kansas City, was chosen president-elect of the Missouri State Medical Association during its annual meeting in Kansas City, April 27-29, and Dr. Homer L. Kerr, Crane, was installed as president. Mr. E. H. Bartelsmeyer, St. Louis, is executive secretary of the association. The next annual session will be in St. Louis.

NEW JERSEY

Aurora Institute Lectures. — Dr. George T. Pack, New York, delivered the first of the 1942 medical lectures sponsored by the Aurora Institute, Morristown, May 24, on "Problems in Cancer Surgery."

State Medical Election.—Dr. Ralph H. Hollinshed, Westville, was named president-elect of the Medical Society of New Jersey at its annual meeting in Atlantic City in April. Dr. Elias J. Marsh, Paterson, who was inducted into the presidency, is the third physician with this name to head the society. His father was president in 1891 and his grandfather in 1850. Dr. Alfred Stahl, Newark, is the secretary of the society.

Medical-Surgical Plan Approved.—The board of trustees of the state medical society has approved the organization of the Medical-Surgical Plan of New Jersey, to supersede plan number 2 of Medical Service Administration. The purpose of the plan will be to provide payment for eligible medical and surgical services rendered by fully licensed physicians to persons admitted as bed patients in approved hospitals. The plan will operate under an agreement with Hospital Service Plan of New Jersey, by which the physical work of administration will be performed by existing facilities of the Hospital Plan without profit to the latter. Matters relating to professional services, patient-physician relationship, payment of physicians' services and other administrative details will be performed by the administrative personnel of Medical-Surgical Plan. The new project will be operated as a separate corporation from Medical Service Administration. The subscription rate will be 75 cents for each subscriber and $2 for each family a month, with certain limitation on the amount of services eligible for payment. The plan will not operate in any county of the state unless 51 per cent of the physicians participate.

NEW YORK

School Physicians Conference. — The New York State Association of School Physicians will hold its annual meeting and conference on June 22 at the Grand Union Hotel, Saratoga Springs. The program has been arranged to interest school physicians, nurses, dental hygienists, health officers and general practitioners of medicine.

Rabies in a Horse.—For the first time rabies in a horse has been reported to the state health department, according to a release of May 24. The horse became ill in his stable at a race track in Nassau County and bit its groom on the arm. The animal developed partial paralysis, tremors and staggering and was ordered destroyed. The horse's head was sent to the state laboratory, which later confirmed the diagnosis of rabies. The horse had come from a ranch in Texas and had been trained at Columbia, S. C. It had raced in Florida and was later sent back to Columbia for further training. From there it was taken by rail to a race track in Nassau County. There were eighteen known contacts to the horse. The animal was said to have been under careful supervision, and no history could be obtained of its having been bitten by a dog or having been in contact with any rabid animal while in Nassau County. According to the state department of health, animal rabies had been prevalent in the vicinity of the Columbia stables where the horse had been in training.

New York City

Dr. Jean Curran Chosen President of Long Island College.—Dr. Jean A. Curran, since 1937 dean of the Long Island College of Medicine, Brooklyn, has been elected president of the school. He fills the vacancy that occurred when Dr. Frank Babbott, president since 1931, resigned last fall because of ill health. Since then he had been acting president.

Retirements at Columbia.—The retirement of the following members of the faculty at Columbia University has been announced: James H. McGregor, Ph.D., since 1924 professor of zoology and a staff member since 1897; Dr. Horatio B. Williams, Dalton professor of physiology since 1922 and a member of the faculty since 1911, and Ernest L. Scott, Ph.D., since 1922 associate professor of physiology and a member of the staff since 1912.

New Unit at Home for Incurables. — A new $250,000 building was recently completed at the Beth Abraham Home for Incurables. The new unit is considered the hospital wing of the home and offers accommodations for 62 additional patients as well as the following services: surgery, x-ray, electrocardiograph, laboratory and dental treatment, physical therapy and hydrotherapy. The original four story building cared for 256 incurable men and women of all types.

Dr. Loeb Named First Lambert Professor of Medicine.—Dr. Robert F. Loeb, professor of medicine, Columbia University College of Physicians and Surgeons, has been named Lambert professor of medicine at the school. Dr. Loeb is the first incumbent of the chair, which was established in honor of Dr. Samuel Waldron Lambert, dean of the school from 1904 to 1919, who died on February 9. A native of Chicago, Dr. Loeb graduated at Harvard Medical School in 1919. He is 47 years of age.

Lectures in Honor of Dr. Schick. — A fund has been given to Mount Sinai Hospital to inaugurate a series of lectures in honor of Dr. Béla Schick, who has retired after serving as pediatrician in chief at the hospital. The fund to finance the lectures was contributed by friends and associates. Dr. Schick was born in Boglar, Hungary, in 1877. He received his degree in medicine at the Karl Franz University, Graz, Germany, in 1900. He practiced in Vienna and served as professor of pediatrics until 1923, when he came to the United States. He became a naturalized citizen in 1929. In 1913 he discovered the "Shick test" for determining susceptibility to diphtheria. He has received many awards. Dr. Schick is now consultant to Mount Sinai Hospital.

NORTH DAKOTA

Personal.—Dr. Paul T. Cook has been made district health officer of six counties with headquarters in Valley City, succeeding Dr. Robert G. White, Valley City, who has been transferred to Bismarck, according to the *Journal-Lancet*.

Meeting of Ophthalmologists. — Dr. Gustaf A. Larson, Fargo, was chosen president of the North Dakota Academy of Ophthalmology and Otolaryngology at its annual meeting in Jamestown, May 19. Other officers are Drs. Tracy W. Buckingham, Bismarck, vice president, and Frederick L. Wicks, Valley City, secretary-treasurer reelected. Dr. Lawrence R. Boies, Minneapolis, addressed the meeting on "The Problem of Deafness."

OHIO

State Medical Election. — Dr. Clifford C. Sherburne, Columbus, was chosen president-elect of the Ohio State Medical Association at its meeting in Columbus, April 2, and Dr. Edward J. McCormick, Toledo, was inducted into the presidency. The next annual session will be in Toledo, the date to be announced later.

Latin American Physician Awarded Fellowship.—Dr. Leopoldo Luis Benedetti B., Panama, has been awarded a fellowship in pediatrics by the American Academy of Pediatrics, the training to be carried out at the University of Cincinnati College of Medicine. Dr. Benedetti graduated at Georgetown University School of Medicine, Washington, D. C., in 1936 and has recently been working for the Public Health Service of Panama.

Conservation Conference.—"Our Health Depends on Our Soil" will be the theme of a conference on conservation, nutrition and human health presented as a featured event of the Conservation Laboratory at Tar Hollow Camp near Chillicothe, June 27-28. The program arranged by Dr. Jonathan Forman, Columbus, director general of the International Correspondence Club of Allergy, will consist of the following:

Wilber Stout, B.E., Columbus, Water, the Life Blood of Ohio.
William A. Albrecht, Ph.D., Columbia, Mo., The Nutrient Quality of the Soil.
Kenneth C. Beeson, Nutrient Quality of Plants and Its Relation to Soil and Animals.
Paul B. Sears, Ph.D., Oberlin, Influence of Ohio's Climate on Plant Life.
Dr. Clarence A. Mills, Cincinnati, Influence of Ohio's Climate on Human Health.
Dr. Forman, "Hidden" Hunger in Man.

The Conservation Laboratory is jointly sponsored by the department of education of the state of Ohio, the division of conservation and natural resources of the state of Ohio and Ohio State University, Columbus.

OKLAHOMA

Isolation Unit for University Hospital. — The Federal Works Agency has recently allotted $125,000 to the University of Oklahoma School of Medicine, Oklahoma City, to erect an isolation building adjacent to the University and Crippled Children's hospitals on the campus at Oklahoma City. The sum will cover the cost of building and equipment.

State Medical Election.—Dr. James Stevenson, Tulsa, was chosen president-elect of the Oklahoma State Medical Association at its annual meeting in Tulsa, April 23, and Dr. James D. Osborn Jr., Frederick, was installed as president. Dr. Galvin L. Johnson, Pauls Valley, was chosen vice president. Dr. Lewis J. Moorman, Oklahoma City, is secretary. The 1943 session will be in Oklahoma City.

PENNSYLVANIA

Half Century of Milk Sanitation. — The completion of fifty years in milk sanitation was observed at a meeting in Pittsburgh, May 14, by the Pennsylvania Public Health Association in cooperation with the Pennsylvania Association of Dairy Sanitarians and the Tri-State Food and Health Officials. The program reviewed the start of the bacteriologic control of milk quality in this country through the laboratory work done in Boston by the late Dr. William T. Sedgwick and his associates and recalled that in 1892 a paper by Sedgwick and Batchelder on "A Bacterial Examination of the Boston Milk Supply" was published in the *Boston Medical and Surgical Journal* and that in the following year the late Dr. Henry L. Coit began his "memorable work on certified milk," and pasteurized milk stations were established in New York City by Nathan Straus. As a result of papers presented at the anniversary meeting, the Pennsylvania Public Health Association at its regular annual meeting on May 14 adopted a series of resolutions acknowledging Sedgwick's contributions to public health and urging the continued pasteurization of milk and the control of raw milk as a public health measure.

Philadelphia

Pathologist Given Strittmatter Award.—DaCosta Oration.—Dr. Joseph McFarland, emeritus professor of pathology, University of Pennsylvania School of Medicine, was presented with the 1941 Strittmatter Award of the Philadelphia County Medical Society on May 7. The award, which consists of a scroll describing the accomplishments of the recipient and a gold medal, was presented by Dr. Jacob Parsons Schaeffer, chairman of the society's committee on the Strittmatter Award. Dr. William Wayne Babcock, professor of surgery and clinical surgery, Temple University School of Medicine, delivered the annual DaCosta Oration before the society on "The Life of a Surgeon."

Annual Postgraduate Lectures.—The Ninth Annual Postgraduate Clinical Lectures given under the auspices of the attending staff of Mercy Hospital and the school for nurses were offered May 18-22 by:

Dr. William D. Stroud, Effort Syndrome.
Dr Clyde H. Kelchner, Allentown, Pa., Nonarticular Rheumatism and Its Treatment.
Dr. Donald Guthrie, Sayre, Pa., Diagnosis of the Diseases of the Thyroid with Special Reference to the Treatment of Different Cases.
Dr. William Bates, Abdominal Emergencies with Regard to the General Practitioner.
Barook J. Masuda, D.D.S., Acute Infections, Traumatic Injuries and Surgery of the Head and Neck.
Dr. Harrison F. Flippin, Factors Responsible for Successful Sulfonamide Therapy.

TEXAS

Brinkley Dies.—Dr. John R. Brinkley, "goat gland" specialist, died May 26 at a hospital in San Antonio. Newspapers report that he had been under treatment for a heart ailment since the amputation of a leg in Kansas City, Mo., last winter. He was 56 years of age.

Study Courses. — The Dallas Southern Clinical Society announces a series of summer courses for the continuation of medical study to be held in Dallas June 22-24, covering cardiovascular disease, dermatology, fractures and obstetrics. Additional information may be obtained from the secretary of the society at 1133 Medical Arts Building.

Tuberculosis Study at San Antonio.—The U. S. Public Health Service recently conducted a tuberculosis survey in San Antonio at the request of city officials and its health officer Dr. William A. King. Suspects between the ages of 12 and 50 were examined at various centers. A feature of the study was the use of a new 35 mm. camera, with which it was estimated that some thirty thousand roentgenograms would be made. The staff sent by the public health service included a physician, technician, secretary and several employees, according to the state medical journal.

WASHINGTON

Annual Registration Due July 1. — All practitioners of medicine and surgery holding licenses to practice in Washington are required by law to register annually on or before July 1 with the director of licenses and at that time to pay a fee of $5, thereby renewing their licenses for one year. Failure on the part of a licentiate timely to register and pay the required fee renders his license to practice invalid, but his license may be reinstated on written application to the director and on payment of the delinquent fees and a penalty of $10.

Society News.—The King County Medical Society devoted its meeting, May 4, to a panel discussion on therapy selection for cancer in various parts of the body; the speakers were Drs. Donald V. Trueblood, Charles B. Ward, Simeon T. Cantril, Paul R. Rollins and Erroll W. Rawson, Seattle.——Dr. Leon A. Goldsmith, Portland, Ore., addressed the Walla Walla Valley Medical Society, Walla Walla, April 9, on "The Heart in Pregnancy." —— Dr. Frederick Lemere, Seattle, discussed "The Conditioned Reflex Treatment of Alcoholism" before the Multnomah County Medical Society in Portland, May 6.

GENERAL

American Physiotherapy Association.—The twenty-first annual conference of the American Physiotherapy Association will be held at College Camp, Williams Bay on Lake Geneva, Wis., June 28 to July 3. The program will be devoted to discussions on the treatment of war injuries and anterior poliomyelitis. A short course in applied anatomy is also included. The association also announced a graduate program in physical therapy at Northwestern University Medical School, Chicago, July 6 to 24.

Association of Neoplastic Diseases.—The summer meeting of the American Association for the Study of Neoplastic Diseases will be held at the University Hospital, Baltimore, June 25-27, under the presidency of Dr. Julian L. Rawls, Norfolk, Va. Wilson C. Grant, M.S., and John C. Krantz Jr., Ph.D., Baltimore, will discuss "Effect of Certain Substituted Ureas on Enzyme Systems of Walker Sarcoma 319." Two sessions will be devoted to microscopic pathology and one to tumors of the lung. Physicians are asked to bring their microscopes.

Planned Parenthood. — The Tennessee and Florida state medical associations adopted resolutions at their recent annual meetings approving the furnishing to women by physicians of information on family planning. This action brings the total to six states that have now adopted resolutions endorsing the dissemination of family planning advice by physicians. According to an announcement from Dr. Claude C. Pierce, medical director of the Planned Parenthood Federation of America, Inc., New York, three states have been providing family planning information to the indigent in health department clinics with the approval of the local county medical society.

Sight-Saving Classes.—The National Society for the Prevention of Blindness, Inc., New York, announces a group of sight-saving classes to train teachers and supervisors to be conducted at the following universities in cooperation with the national society: Peabody College for Teachers, Nashville, Tenn., June 22-August 1; Wayne University, Detroit, June 29-August 7; State Teachers College, Buffalo, June 29-August 7, and Teachers College, Columbia University, New York, July 6-August 14. The courses will interest teachers of special classes for the education of children with seriously defective vision and will help nurses and social workers in conserving the sight of children in their care.

Harvey Cushing Society.—Dr. Eric Oldberg, Chicago, was chosen president of the Harvey Cushing Society during its meeting in New York, May 18-20. Dr. Franc D. Ingraham, Boston, is vice president and Dr. Louise Eisenhardt, New Haven, Conn., secretary-treasurer. Among the speakers at the meeting were Drs. Lawrence S. Kubie and Sydney G. Margolin, New York, on "A New Quantitative Method for Studying Variations of the Respiratory Cycle" and "A Physiological Method for the Induction of States of Partial Sleep"; Dr. Stafford L. Warren, Rochester, N. Y., "Ethyl Iodophenylundecylate (Pantopaque). A New Contrast Medium for the Visualization of the Central Nervous System," and Drs. James W. Watts and Robert H. Groh, Washington, D. C., "Vascular Facial and Cranial Neuralgia." The session concluded with a panel discussion on war injuries. The next meeting will be held in Chicago in 1943.

Resolutions Urge Coordination in Industrial Hygiene Services.—At a meeting in Washington, D. C., of the National Conference of Governmental Hygienists, April 9-11, resolutions were adopted governing participation in local and national

defense service. One resolution recommends that the division of industrial hygiene of the National Institute of Health, U. S. Public Health Service, in cooperation with the special committee on industrial health and medicine of the Office of Defense Health and Welfare Service, assume the leadership in developing plans to extend health services in small industries and in promoting the voluntary establishment of such programs by management. Another resolution urged the health service to direct the development and administration of the immediate mobilization of medical, nursing and hospital facilities in critical war industries areas, stressing the need for effecting closer working relationships with state and local departments of health for the extension of general public health services to war workers and their families.

Special Society Elections. — Dr. George Blumer, New Haven, was elected president of the Association of American Physicians during its annual meeting in Atlantic City, May 5-6. Other officers include Drs. Warfield T. Longcope, Baltimore, vice president, and Joseph T. Wearn, Cleveland, secretary.—— Dr. John B. Barnwell, Ann Arbor, Mich., was chosen president-elect of the American Trudeau Society at its meeting in Philadelphia, May 8. Drs. Henry Franklin Carman, Dallas, Texas, was chosen vice president and Julius L. Wilson, New Orleans, secretary-treasurer.——Dr. James L. Gamble, Boston, was chosen president of the American Pediatric Society at its meeting in Skytop, Pa., April 30-May 2. Dr. Hugh McCulloch, St. Louis, is the secretary.——Dr. Charles J. Imperatori, New York, was elected president of the American Laryngological Association at its meeting in Atlantic City, May 26. Dr. Harold I. Lillie, Rochester, Minn., was chosen vice president to succeed Dr. Arthur W. Proetz, St. Louis, who was named secretary.——Dr. Edward A. Strecker, professor of psychiatry, University of Pennsylvania School of Medicine, Philadelphia, was chosen president-elect of the American Psychiatric Association at the meeting in Boston, May 18-22, and Dr. Arthur H. Ruggles, Providence, R. I., was installed as president. The winner of the contest for the design of an emblem, announced last year, was Wheeler Williams, New York, sculptor. The emblem is to be used in the centennial celebration of the association in 1944. Philadelphia, where the association was founded, has been designated the place for the centennial celebration. The 1943 meeting will be held in Detroit.

Guggenheim Fellowships.—The John Simon Guggenheim Memorial Foundation, New York, has announced eighty-two fellowships carrying total awards of $196,600. Included among the many fellowships are the following for work in biology:

Thomas Rogers Forbes, Ph.D., instructor in anatomy, Johns Hopkins University School of Medicine, Baltimore, studies of the physiology of reproduction.

Robert Gaunt, Ph.D., assistant professor of biology, New York University, studies of the functional control of the adrenal cortex.

Dr. Salvador E. Luria, research assistant in surgery, Columbia University, New York, studies of certain biologic and physicochemical properties of bacteriophage.

Jane Marion Oppenheimer, Ph.D., instructor in biology, Bryn Mawr College, Bryn Mawr, Pa., studies of the development of structure and function in the central nervous system of fishes.

Charles L. Huskins, Ph.D., professor of genetics, McGill University, Montreal, Quebec, Canada, the preparation of a book on the cytology and genetics of plants, animals and man.

David R. Goddard, Ph.D., assistant professor of botany, University of Rochester, New York, a study of the respiratory enzymes of higher plants.

Mr. Dietrich Bodenstein, research associate in biology, Stanford University, Stanford University, investigations of the problem of metamorphosis in insects, with special emphasis on the role of hormones in development.

Since the establishment of the foundation seventeen years ago, one thousand two hundred and ten fellowships have been awarded under stipends totaling $2,488,000.

Grants Awarded for Research in Nutrition. — Grants totaling $125,000 have been awarded by the Nutrition Foundation, Inc., New York, to finance a broad program for fundamental research in the science of nutrition. The grants are the first allotted by the foundation, which was formed in December. Thirty-six grants ranging from $250 to $7,000 each went to twenty-five universities and research groups in various parts of the United States and Canada. Five universities received multiple grants; these were Columbia, Yale and the Universities of Illinois, Wisconsin and Minnesota. Institutional grants went to the Children's Fund of Michigan, Detroit, the Food and Nutrition Board of the National Research Council and the New York Agricultural Station, Geneva, N. Y. The projects to be financed were chosen from eighty-one applications by the foundation's scientific advisory committee, of which Charles Glen King, Ph.D., is director. Among the studies to be considered are nutrition in relation to fatigue, effects of environment on nutritional requirements and a natural butter of high nutritional value and high melting point suitable for use in the tropics.

Survey of Philanthropic Foundations. — A survey of reports of three hundred and fourteen foundations recently completed by Raymond Rich Associates, New York, indicates that for medical research, medical education, the erection and support of hospitals and other purposes related to medicine and public health, the foundations granted individuals and institutions 30.4 per cent of their total disbursement, or $12,273,590, during 1940. Twenty-nine per cent of the total gifts, or $11,696,605, was given to general education. The other leading fields in which foundations subsidize projects are, in the order of volume of grants, social welfare $4,395,898, the physical and biologic sciences $3,783,643, social sciences $1,528,510, religion $1,224,044 and government and public administration $1,062,917. In bringing together these and other figures covering foundation activities and structures, the Rich organization restricted its report to foundations that paid out at least $1,500 during 1940 for projects not directly controlled by foundation staff members. Previous surveys provide comparable figures for 1937, 1934 and 1931. Although the grants of several large foundations provided an important part of the subsidies for medical and public health projects, gifts over one million dollars in 1940 accounted for only 56 per cent of the total grants in this field as compared with the 1937 gifts of over one million dollars, which accounted for 79 per cent of the total for that year. However, the smaller foundations have devoted an increasingly larger share of their income to medical research. The four gifts of more than a million dollars in this field in 1940 were the Rockefeller Foundation $2,884,054, W. K. Kellogg Foundation $1,505,480, the Commonwealth Fund $1,401,730 and the Duke Endowment $1,086,581. Gifts of the Carnegie Corporation of New York for medicine and public health amounted to $796,104 in 1940, John and Mary R. Markle Foundation $685,805 and the National Foundation for Infantile Paralysis, Inc., $515,048. Projects in the educational field received 29 per cent, $11,696,605, of the grants paid in 1940. In the education field the General Education Board, a Rockefeller fund, once again led with grants of $3,033,084 in 1940, and the Duke Endowment contributed $1,873,825. The third and fourth largest source for foundation funds in support of educational projects were the Board of Directors of City Trusts of the City of Philadelphia and the Carnegie Corporation of New York, which granted $1,756,471 and $1,624,446 respectively. In addition to the general educational projects surveyed in the main section of the report, a special survey has been made for the first time of support available for education through student loan funds. The thirty-two funds under survey made loans totaling $1,158,740 during 1940 applicable to tuition in more than one institution. Social welfare received $4,395,897, or nearly 11 per cent, of the total reported. Although ranking third in volume of grants, more foundations contributed to this field than to any other. The largest two donors to social welfare projects in the year under survey were the Carnegie Foundation for the Advancement of Teaching $1,929,443 and the New York Foundation $285,300. The board of directors of City Trusts of the City of Philadelphia gave the third largest contribution in this field, $127,559. The physical and biologic sciences received the fourth largest share of the grants, a total of $3,783,643. The leading donors of these funds were the Rockefeller Foundation with gifts of $2,882,027 in 1940, the General Education Board $478,825 and the Carnegie Institution of Washington $151,697. Grants for the field of social sciences totaled $1,528,510, a substantial increase over the total contributions in 1937, which puts this in fifth place in 1940 as compared with seventh place in the last study. Large grants in this field were made by the Rockefeller Foundation, $576,213, and the Carnegie Corporation of New York, $428,996. This survey brings up to date a similar survey of two hundred and forty-three foundations published in 1939.

FOREIGN

Personal.—The William Julius Mickle Fellowship of the University of London has been awarded to Dr. Alexander Fleming, professor of bacteriology in St. Mary's Hospital Medical School, London, according to *Science.*——Dr. Robert K. S. Lim, who until the war with Japan broke out in 1937 was professor of physiology, Peiping Union Medical College, Peking, China, and who since then has been in charge of the medical services of the Chinese Red Cross, has been elected foreign associate of the National Academy of Sciences.—— Charles Galton Darwin, Sc.D., since 1938 director of the National Physical Laboratory, London, has been named scientific adviser to the British Army Council, according to the New York *Times.*

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 25, 1942.

The Increase in Tuberculosis

The slight increase in tuberculosis since the outbreak of war has been reported in previous letters. In a letter to the *Times* Sir Charles Wilson, president of the Royal College of Physicians, states that the increase is probably due to more than one cause. To limit the spread of the disease we must recognize it early, before the person affected has become a source of infection, when indeed he does not know that he is ill. This can be done only by x-ray examination of the chests of all the men and women in the community. During the past eight years the Royal College of Physicians has carried out a survey of this kind on seven thousand nurses, students and office workers. Cannot this be done on a national scale in time of war? In the United States, Canada and Germany the chest of every recruit is roentgenographed as a matter of routine. In England every rating in the navy is thus examined when he passes through the depot and also the flying personnel of the air force. The army has made a beginning by examining five thousand men at a special center. The question is not whether such examinations are possible but on what scale in time of war. Only a limited personnel is available, and months must elapse before apparatus ordered for mass radiography can be delivered. However, it is possible to examine every recruit for the fighting forces and desirable to extend the examination to some limited field of industry. For the individual with a latent focus there would be the advantage that he would not be submitted to work for which he is physically unfitted and that he would be treated in the most hopeful stage; for his fellow workers, that they would not be exposed to infection. The state would gain by a drastic cut in pensions for tuberculosis. During and since the last war the United States spent $900,000,000 in pensions for the tuberculous.

Hospital for Treatment of Industrial Injuries

The first of a new type of hospital—one specialized for the treatment and rehabilitation of persons injured in industry or road accidents—has been established. In the great industrial city of Birmingham the Queens Hospital, an important general hospital and medical school for a century, has been specialized for this purpose. The process of conversion was begun nearly a year ago but is not yet completed. In the first nine months 1,500 inpatients and 11,000 outpatients were treated in this accident hospital. The latter are now attending at the rate of 350 a week. The expenditure of the hospital is estimated at $300,000 a year and is to be met by contributions from the Ministry of Health, the Hospital Contributory Association, the Birmingham Corporation and a subsidy from industry.

All hospitals in industrial areas of course afford service to industry, but the Birmingham Accident Hospital, in addition to being entirely a casualty service, is intended to be a training center for industrial nurses and ambulance and first aid workers. It will be connected with Birmingham University as a teaching center for undergraduate and postgraduate medical students. It will also be a center for industrial medical officers attached to the various works. Regular meetings with the medical staff of the hospital will be held and cases will be discussed. It may become a center from which medical officers are recruited. As the full title, "Birmingham Accident Hospital and Rehabilitation Center" shows, the patients will be treated until they are fit to return to work. Vocational training centers may be established in the larger factories in association with the hospital for those who cannot resume their former occupation.

Sir Thomas Lewis Awarded Medal

The Copley medal, the highest honor of the Royal Society, has been awarded to Sir Thomas Lewis. The president, Sir Henry Dale, pharmacologist, described Lewis as "renewing and carrying forward with special directness the great tradition which William Harvey created before the society was founded." The Copley medal is given yearly for eminence in any branch of natural science and is entirely free from national restrictions. Among biologists who have received it are Darwin (1864), Pasteur (1874), Bernard (1876) and Virchow (1892). Few men have gained this honor at such an early age as Lewis. Only once in the last hundred years has it been given to a clinician (Lord Lister in 1902). The president described Lewis's work as still in vigorous progress but for interruption by war duties and as the application of precise and controlled methods of experimental research to problems of clinical medicine. This has enabled him to achieve a detailed analysis of abnormalities of function produced by disease, injury or hereditary defect. So far his attention has been centered on the circulation of the blood and its disorders. Attracted by the work of Mackenzie to the study of abnormal rhythms of the heart, he recognized, about 1908, the opportunity for closer investigation offered by the string galvanometer of Einthoven. With its aid he identified auricular fibrillation as the cause of a particular kind of complex irregularity. He traced with astonishing precision of measurement and timing the point of origin and course of the rhythmic waves of excitation and contraction in the normal heart of the dog and finally, for comparison, in other vertebrates. This is one of the noteworthy achievements of experimental physiology in our time and has given to physiology much of the present detailed knowledge of the nature of the heart beat. But for Lewis its greater importance lay in giving to clinical medicine the background for an accurate picture of disturbances of the normal mechanism and an advance in the diagnosis, prognosis and treatment of disordered action of the heart.

In 1917 Lewis began investigations by direct experiment on the blood vessels of the human skin. He elucidated the means by which the resistance to the flow of blood is maintained and varied, including their complex reactions to chemical substances akin to histamine, which he showed were released from the cells of the epidermis by injury or irritation. He extended these investigations to vascular disorders of the limbs and more recently to pain and functional defects in muscles and nerves due to interruption of the blood supply. He has been an inspiring leader of young workers in clinical research as an experimental science.

The Food Situation

In the House of Commons Major Lloyd George, parliamentary secretary to the Ministry of Food, stated that twelve months ago the country was enduring the worst trials of the war on the food front. Our principal sources of supply had been cut off, we were subjected to intensive aerial bombardment of our ports and industrial centers and our shipping was attacked by submarine and airplane. During the winter of 1940-1941 our food imports showed a substantial decline. Moreover, food importing was reduced both by the loss of ships and by diversion to the support of military operations abroad. But thanks to stocks which had been accumulated we maintained our supplies. During the second half of 1941 a substantial improvement occurred and stocks in December 1941 were 30 per cent higher than in 1940. This was due to two factors: increased agricultural production and substantial help from the United States, in which canned meats and milk products gave us exactly what we wanted to improve our dietary.

This year would be a difficult period. We had to decide whether any particular ship could best contribute to victory by bringing food or by supplying our armies abroad. It might be necessary to reduce our existing rations. We had passed through two and one-half years of war without any serious

sacrifice, though with inconvenience and loss of freedom. The system of rationing and price control had worked very well and enabled each consumer to get a fair share. The ministry was trying to look after food according to the needs of the people. There were five thousand five hundred workers' canteens serving substantial meals as well as snacks. Eighty per cent of the miners had canteen facilities, and before long 95 per cent would have them. Special efforts were made, with every evidence of success, to prevent children suffering from the restrictions of food supplies. About six hundred and fifty thousand were receiving meals at school and three and a half million were obtaining milk in addition to priority supplies at home. Supplies of black currant juice and cod liver oil were made available to them, and they had priority for oranges. Need rather than ability to pay had been the mainspring of the ministry's policy.

The Importance of Dried Foodstuffs

In a series of lectures on planned nutrition in wartime, Prof. J. C. Drummond called attention to the importance of dried foodstuffs. Recently the Low Temperature Research Station at Cambridge produced experimental batches of dried vegetables containing about 80 per cent of the original vitamin content of the fresh vegetable. The vitamin loss from exposure to air had been prevented by packing the dried product in an inert gas. Thus dried vegetables could be kept indefinitely at the full vitamin value of the material as put in the container. In the case of meat the Cambridge experiments resulted in a product which, on addition of water, was reconstituted so as to be practically indistinguishable from a cooked mincemeat and usable in the form of rissoles and the like. The product also maintained its character for several years when kept in a gas pack and was a great advance on anything heretofore produced as dried meat. A combination of dried vegetables and meat in the form of powder has also been produced and on addition of hot water gives a palatable soup. Professor Drummond thinks that the drying of foodstuffs will become as important as the canning industry has been during the last thirty years. The dried product, when reconstituted, is similar in palatability to the fresh material, while the vitamin content and other materials specially valuable in wartime nutrition are preserved.

Increased Rationing

Dried fruits and certain cereals and pulses have been rationed for the first time. They include rice, sago, tapioca, lentils, dried peas and all dried fruits, including evaporated fruits and dates. They are not rationed by quantity per head, but coupons must be surrendered in order to obtain them, according to a scale laid down.

The Use of Vitamins in Hemorrhagic States

At the Section of Therapeutics and Pharmacology of the Royal Society of Medicine Dr. Harold Scarborough said that the effect of vitamin D in controlling the bleeding tendency in jaundice had been shown by Ivy and his associates but was in some danger of being forgotten in the spate of literature about vitamin K. No satisfactory explanation of the effect of vitamin D was available, but it was known to increase the serum calcium, which had a function in coagulation. As to the effect of vitamin C on the hemorrhagic state, a low capillary condition was found in scurvy, but save in special circumstances he had never found that ascorbic acid increased capillary resistance. Lack of capillary resistance did not appear to be due to lack of ascorbic acid. Scurvy was a complex deficiency state and in certain conditions capillary resistance might be temporarily increased. There was evidence that petechial bleeding might be produced by deficiency of vitamin P. Many of the bleeding diseases were associated with low capillary resistance, i. e. with excessively fragile capillary walls. If purpura depended on this, administration of vitamin P would be the logical treatment. Scarborough reported a case of petechial bleeding and epistaxis in a woman of 75 in which petechial bleeding stopped under administration of vitamin P and recurred when this was stopped.

Dr. R. G. Macfarlane said that hemorrhagic disease in the newborn responded to vitamin K. Mr. A. L. Bacharach described animal experiments with vitamin P which showed that when ascorbic acid failed to improve purpuric bleeding in deficiency states the purpuric spots cleared up under vitamin P. Such cases had also been seen in clinical practice. In reply Scarborough said that only certain forms of purpura were susceptible to treatment by vitamin P. The form found in congestive heart failure was not, at least with such preparations as were now available.

Naval Surgeon Who Worked to the End

Among those saved when the battleship *Prince of Wales* was sunk by Japanese air attack is Surgeon Lieut.-Comdr. E. D. Caldwell. While the vessel was sinking he remained on board administering morphine, bandaging the wounded and placing them on rafts. Only when the ship heeled over a minute before her last plunge did he follow his patients into the sea.

BRAZIL

(From Our Regular Correspondent)

April 4, 1942.

War Medicine in Brazil

The problems of war medicine are being studied by Brazilian doctors as a means of cooperating in the struggle against the common enemy. Many doctors are devoting all their time to military medicine. The medical societies have held many discussions about war medical problems.

In São Paulo, which is one of the principal centers of the country, the Associação Paulista de Medicina is engaging in an extensive series of conferences. At the first meeting Prof. Bernardes de Oliveira emphasized the good results from the use of sulfanilamide applied at once locally to wounds on the battlefield. This method has already been used on injured workers of the Paulista Railway, and patients have been removed safely after fifteen or sixteen hours as far as 400-500 kilometers. At the same meeting excellent effect of sulfanilamide by arterial injection was pointed out, according to the method proposed by Dr. Eurico Branco Ribeiro, in the treatment or prevention of infection of the extremities.

Later Prof. Alipio Correa Netto discussed the modern management of burns.

Tuberculosis and Syphilis in Prostitutes in Rio de Janeiro

The problem of tuberculosis among prostitutes has been studied by Drs. Aloisio de Paula, Francisco Benedetti and Cecilia Ribas Ferreira. Chest roentgenograms of 1,684 women revealed active tuberculosis in 36. Among 26 with the infiltrative type 19 had the initial form, in 5 of whom it was so slight as to be considered borderline. There was observed a high incidence of syphilis. According to roentgenographic demonstration by Abreu's method the rate of aortitis was 11.1 per cent in 1,684 women.

Immunization Against Tuberculosis

The wide use of BCG vaccine against tuberculosis in Rio de Janeiro is demonstrated by recent statistics published concerning the work of the Institute Viscondessa de Morais. In 1941 the institution administered the vaccine to 14,632 children. Since 1927 the number of immunized children has increased to 105,858.

Death of Professor Torres

Prof. Lemos Torres, director of the Escola Paulista de Medicina, was thrown from a horse and died immediately. He was a well known Brazilian scientist whose works on cardiol-

ogy and phthisiology are spread throughout all Latin America. He proposed a personal sign to indicate small pleural effusion.

As the new director of the Escola Paulista de Medicina Prof. Alvaro Guimarães Filho, teacher of obstetrics in the school, has already been named.

PALESTINE

(From Our Regular Correspondent)

April 30, 1942.

Report of the Health Department

In the report of the health department for the year 1940 just published some data are remarkable. Out of the total expenses of the government, only 3 per cent went to the expenses of the department of health.

The general death rate per thousand population rose from 13.90 in the year 1939 up to 18.49 in 1940. This increase is to be referred mainly to the existing epidemic of measles.

For each of the communities births, deaths and child mortality have been as follows:

	Population	Mortality per Thousand Population	Births per Thousand	Child Mortality per Thousand Births
Christians	118,966	12.21	31.11	107.00
Moslems	873,453	24.74	47.42	147.14
Jews	456,091	8.18	23.72	59.07
Others	12,413	18.13	50.75	106.35

The main causes of death have been diarrhea and enteritis 18.1 per cent, pneumonia 18 per cent, diseases of the heart 6.9 per cent; cancer and other malignant tumors comes sixth, 4 per cent, followed by measles, 3.4 per cent.

The infectious diseases during the year 1939 in comparison with the year 1940 show: Incidence of measles rose from 237 up to 14,469 cases, with deaths from 11 in 1939 up to 1,422 in 1940; typhoid 1,235 cases in 1939 with 134 deaths and 1,684 cases in 1940 with 165 deaths.

Two new endemic fields for leishmaniasis have been discovered in Jericho and Haifa, where 200 patients were treated during the year.

Second Nutrition Conference in Jerusalem

In December 1941 Col. G. W. Heron, head of the health department, controller of supply, spoke at the second Nutrition Conference in Jerusalem. A list of the simplest of all daily rations from commodities of local production was given by Colonel Heron. This list included flour, wheat, millet, olive oil, onions, lentils, raisins, oranges, grapes, melons and vegetables. Milk, the supply and distribution of which had been announced as being the main topic for consideration at the conference, was not included. Later Colonel Heron included milk in his list of highly desirable foods rather than among the essentials.

Control of Malaria in Palestine

Recently the government published "A Review of the Control of Malaria in Palestine (1918-1941)," which, with the help of very instructive maps, shows the most successful efforts to fight this disease undertaken by the department of health. In 1918, when the Palestine administration was taken over by Great Britain and Jewish colonization was just starting, malaria was one of the main scourges of the country. As the report states, the great success of the antimalarial work has been made possible mainly by "that unique cooperation from both Arab and Jew which is a distinctive feature of the Palestinian campaign against this disease." The rate of enlarged spleens, for example, dropped in Jerusalem—a notorious center of malaria—from 44.3 per cent in 1918 to 1.6 per cent in 1940. While in 1922 about 7.2 per cent of government dispensary patients in urban districts were treated for malaria, only 0.5 per cent attended dispensaries all over Palestine in 1940. According to the heading of the brochure, one would expect to find more about the antimalarial work done by the Jewish health authorities, that is by the hygiene department of the Hebrew University with its Malaria Research Station at Rosh Pina. The great progress achieved with the assistance of this part of the population has already been mentioned in the Report of the British Royal Commission under the late Earl Peel in 1937.

Fourth Microbiological Congress

In October 1941 the fourth Microbiological Congress took place in Jerusalem under the chairmanship of Prof. I. J. Kligler. The subjects treated included general biology and physiology of micro-organisms, the effectiveness of certain chemotherapeutic drugs and immunobiologic questions. Papers were read by Leibowitz, Hösslin and Avineri Shapiro on the fermentation of polysaccharides and disaccharides through micro-organisms As a result of these investigations, it appears that direct fermentation of complex sugars with no preliminary hydrolysis (maltose) is possible. Ernst Simon reported on the fermentation of butanol-acetone through Clostridium (Weizmann); Kligler and Grossowitz reported on the effect of nicotinic acid on the bacterial metabolism; Sulman on the degradation of estrogenic hormones by means of certain germs, stressing the importance of proteus X and certain kinds of yeast in this connection. Adler and Foner gave an outline, among other subjects, on their cultivation methods of intestinal protozoa on semisolid culture mediums, especially the cultivation of Endameba histolytica on twenty-four hour cultures.

Diagnostic problems were preponderantly referred to by Gurevitch, who gave an account of his diagnostic and differential diagnostic results obtained with the typhoid material of the Rothschild Hadassah University Hospital.

Guest Lecturers

Dr. E. G. Holmes, fellow and tutor of Downing College, Cambridge, and university lecturer in biochemistry, gave two guest lectures on the "Effects of Toxemia on Metabolic Processes" at the Strauss Health Center in Jerusalem in November 1941.

In September 1941 Lieutenant Colonel Fruchaud, professor of surgery (chief medical officer of the Hadfield Spear Hospital Unit, consulting surgeon of the Free French Forces), reported on "War Wounds and Their Treatment." He presented two methods—the French method of wound excision ("epluchage") and the Spanish method (occlusion with adhesive plaster). Fruchaud was in favor of the former and stressed the necessity of completely removing the entire dead tissue, while later only a simple dressing with no rinsing of the wound is necessary.

Dr. Henry Wigderson, Appointed Head Neurosurgeon, Hadassah, Jerusalem

Dr. Henry Wigderson, former instructor in surgery (neurosurgery) at New York University College of Medicine, who has been appointed head neurosurgeon in the Rothschild Hadassah University Hospital, Jerusalem, gave his first public lecture, on the occasion of the second Congress of Neurology in Tel-Aviv, April 17-19.

Army Ambulances

Three standard army ambulances built and equipped by the people of Tel-Aviv were presented to the army. The ambulances, decorated with the Tel-Aviv crest, were handed over in March to the area commander, Colonel Wilkins, by the mayor of Tel-Aviv, Mr. Rokach.

Plague in the Haifa Region

For the first time after a long period plague-infected rats appeared in the Haifa region in 1941. Ten human cases (including two deaths) were reported.

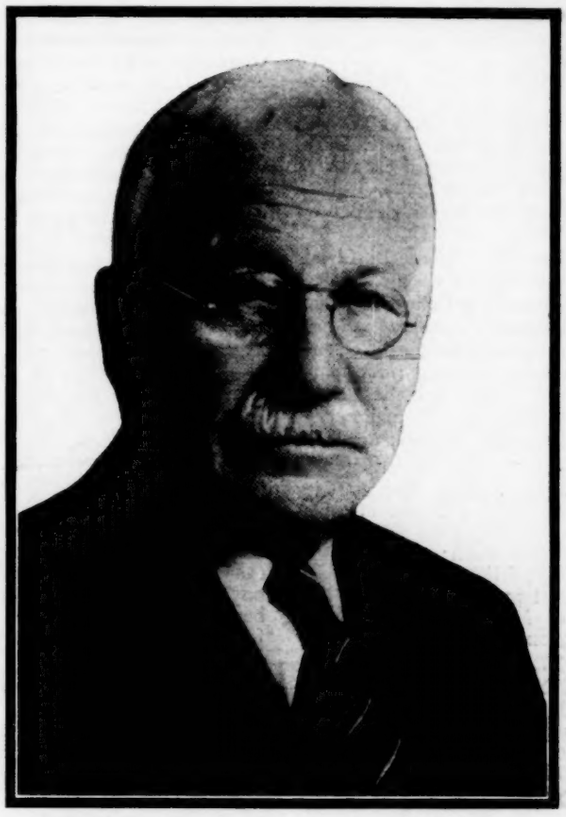
Deaths

John Miller Turpin Finney ✠ professor emeritus of surgery at Johns Hopkins University School of Medicine, died, May 30, at his home in Baltimore, aged 78.

Dr. Finney was born in Natchez, Miss., June 20, 1863. His fundamental education included Princeton, from which he graduated in 1884 and where he played on the football team; Harvard Medical School, Boston, with graduation in 1889, and the Massachusetts General Hospital. He joined the faculty of Johns Hopkins University School of Medicine in 1893 and was subsequently associate professor of surgery, professor of clinical surgery and professor of surgery. He had been professor emeritus since 1933. Concurrently during his long teaching career Dr. Finney held many staff positions at the Johns Hopkins Hospital, serving too on the staffs of the Union Memorial Hospital, Church Home and Infirmary, Hospital for Women and Sinai Hospital.

Dr. Finney was a member and past president of the American Surgical Association, Medical and Chirurgical Faculty of Maryland, Inter-State Post Graduate Association of North America, a founder and past president of the American College of Surgeons, a past president of the Southern Surgical and Gynecological Association and a member of the Society of Clinical Surgery. Included among the organizations in which he held honorary fellowships were the Medical Society of London, the Hunterian Association of London, the Royal College of Surgeons of England and the Royal College of Surgeons of Ireland. At one time he was offered the presidency of Princeton, and he was for long a member of its board of trustees.

Dr. Finney entered World War I with the title of major as director of the Johns Hopkins Hospital medical unit. He was awarded the Distinguished Service Medal by the American government for his services as chief consultant with the rank of brigadier general to the American Expeditionary Forces. In 1920 he was decorated with the insignia of an officer of the French Legion of Honor on behalf of the French government for his ministrations to French soldiers in American hospitals overseas. He was also made Commandeur de l'Ordre de la Couronne, Belgium. In 1931 he was awarded the Henry Jacob Bigelow Gold Medal by the Boston Surgical Society for his scientific contributions to and distinguished services in the field of surgery. In 1931 he was appointed consultant to the Committee on the Costs of Medical Care and in 1934 to the Baltimore City Health Department. Honorary degrees have been conferred on him by many universities, including Tulane, Harvard, and Jefferson Medical College. In 1939 he directed the establishment of the blood transfusion bureau of the Baltimore chapter of the American Red Cross.



JOHN M. T. FINNEY, M.D., 1863-1942

In 1937 Dr. Finney was honored when the Finney-Howell Research Foundation for cancer fellowships was created under the will of the late Dr. George Walker. At the time of his death, Dr. Finney was president of the foundation. In 1938 he was accorded many honors to commemorate his seventy-fifth birthday, including the presentation of a bust of himself executed by Hans Schuler. He had made numerous contributions to the literature and had devised a method of performing gastroduodenostomy which bears his name.

Dr. Finney's death closes a long and distinguished career in the field of surgery. He was active in the civic affairs of his community, in the Presbyterian Church and in public education in Baltimore. He was a broad minded man, with a sense of humor that carried him through many difficult situations. Frequently he was called to attend great statesmen and leaders, whom he impressed invariably with the dignity of medicine as a profession. In his autobiography, published in 1940, he wrote: "Are our ideals too high? Are we striving after the unattainable? After over fifty years of close association with members of the profession, frankly I do not think so. Unquestionably, not all members of the medical profession measure up to these requirements. But doctors are only human, as a class perhaps more human than any similar group of individuals, because from the very character of their work they gain such insight into human nature and thus come to understand it so well and respect it so highly. This is one of the chief characteristics of the true doctor and one of the crowning glories of a profession most exacting in its demands upon the time and talents of its members, and at the same time offering unlimited opportunities for usefulness in the way of service to humanity. It is this human element, this call to the aid of his fellowmen, wherein lies the charm that appeals so strongly to the true physician. The joy and satisfaction experienced in relieving the ills and ministering to the wants of humanity more than compensate him for the loss of the larger social and pecuniary returns that come from other less onerous and responsible locations. The true physician is supremely happy in his work. He could not be happy doing anything else. Once having caught the vision as it unfolds before his gaze, all else fades into insignificance."

David Bryson Delavan ✠ New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1875; an Affiliate Fellow of the American Medical Association; diplomate of the American Board of Otolaryngology; fellow of the American College of Surgeons; corresponding secretary of the New York Academy of Medicine from 1914 to 1926 when that office was abolished; honorary fellow of the American Laryngological Association and its president in 1893 and in 1918; past president of the New York Laryngological Society; fellow of the Congress of American Physicians and Surgeons; honorary fellow of the Philadelphia Laryngological Society; a charter member of the American Society for the Control of Cancer; member of the Harvey Society, New York Clinical Society and many other societies; for many years president of the Russell Sage Institute of Pathology; at one time professor of laryngology and rhinology at the New York Medical School and Hospital; consultant in laryngology and rhinology at the Mount Sinai Hospital, the Skin and Cancer Hospital, St. Luke's Hospital, Memorial Hospital and the Hospital for Ruptured and Crippled, the latter hospital now being known as the Hospital for Special Surgery; president of the medical board of St. Luke's Home; president of the Grenfell Association of America from 1917 until 1930; in 1931 was awarded the De Roaldes gold medal by the American Laryngological Association; aged 92; died, May 23, of arteriosclerosis.

George Sellers Graham ✠ Birmingham, Ala.; Dartmouth Medical School, Hanover, N. H., 1905; professor of pathology at the University of Alabama School of Medicine; instructor of pathology and bacteriology from 1906 to 1910 and assistant professor of pathology from 1910 to 1913 at his alma mater; formerly professor of pathology at the University of Alabama Graduate School of Medicine; professor of pathology at the Albany (N. Y.) Medical College from 1917 to 1921; member of the American Association of Pathologists and Bacteriologists and the American Society of Clinical Pathologists; member of the American Board of Pathology, Inc.; assistant bacteriologist for the New Hampshire State Board of Health from 1907 to 1913; first assistant in pathology, 1914-1915 and second

assistant in pathology, 1915-1916, Boston City Hospital; pathologist and director of laboratories of the Vancouver (B. C.) General Hospital, 1916-1917; aged 63; died, May 2.

John Brooks Wheeler ✠ Burlington, Vt.; Harvard Medical School, Boston, 1879; instructor in surgery at the University of Vermont College of Medicine from 1881 to 1890, professor of clinical and minor surgery from 1890 to 1900 and professor of surgery from 1900 to 1924 and since 1924 emeritus professor of surgery; member, past president and vice president of the New England Surgical Society; past president of the Vermont State Medical Society; fellow of the American College of Surgeons; member of the American Board of Surgery; trustee of the University of Vermont from 1916 to 1920; consulting surgeon, Mary Fletcher and Bishop de Goesbriand hospitals, Burlington, and the Fanny Allen Hospital, Winooski; served during World War I; author of "Memoirs of a Small Town Surgeon"; aged 88; died, May 1.

John Gardner Hayden ✠ Kansas City, Mo.; Rush Medical College, Chicago, 1904; assistant in surgery at his alma mater, 1906-1907; assistant professor of surgery at the University of Kansas School of Medicine, Kansas City, from 1909 to 1926 and since 1926 associate professor of clinical surgery; past president of the Jackson County Medical Society and the Kansas City Academy of Medicine; formerly vice president of the American Association of Railway Surgeons; fellow of the American College of Surgeons; served during World War I; division surgeon for the Rock Island Railroad, the Chicago, Milwaukee and St. Paul Railroad and the Pullman Company; aged 62; attending surgeon, Bell Memorial Hospital, Kansas City, Kan., and St. Luke's Hospital, where he died, April 17, of bacterial endocarditis.

James Hugh Finch ✠ Champaign, Ill.; College of Physicians and Surgeons, Baltimore, 1895; member of the Clinical Orthopedic Society; fellow of the American College of Surgeons; past president of the Champaign County Medical Society; served during World War I; retired lieutenant colonel in the Medical Reserve Corps of the U. S. Army; for many years physician for the University of Illinois athletic teams; on the staffs of the Burnham City Hospital, Champaign, and the Champaign County and Mercy hospitals, Urbana; aged 71; died, April 21, of coronary thrombosis.

William Jacob Frick, Kansas City, Mo.; Kansas City (Mo.) Medical College, 1888; member of the House of Delegates of the American Medical Association, 1916-1917; member of the Missouri State Medical Association; past president of the Jackson County Medical Society; fellow of the American College of Surgeons; formerly clinical professor of surgery at the University of Kansas School of Medicine, Kansas City; served during World War I; surgeon, Research and Kansas City General hospitals; aged 78; died, April 1.

Frederic Mortimer Johnson ✠ Yonkers, N. Y.; Syracuse University College of Medicine, 1904; member of the National Gastroenterological Association; member of the American Board of Internal Medicine; at one time adjunct professor of gastroenterology at the New York Polyclinic Medical School and Hospital, New York; past president of the Westchester Society of Gastro-Enterology; physician for the draft board; on the staff of St. John's Riverside Hospital; aged 67; died in April.

Manson M. Lairy ✠ Lafayette, Ind.; Medical College of Indiana, Indianapolis, 1893; fellow of the American College of Physicians; at one time medical director of the Lafayette Life Insurance Company; formerly member of the city council and for many years member of the board of education; formerly on the staff of St. Elizabeth's Hospital; aged 79; died, April 13, of mesenteric embolus and auricular fibrillation.

Harry Roy Lohnes ✠ Buffalo; University of Buffalo School of Medicine, 1904; professor of pediatrics emeritus at his alma mater; member of the American Board of Pediatrics, Inc.; member of the American Academy of Pediatrics; served during World War I; for many years on the staffs of the Buffalo General, Children's and Edward J. Meyer Memorial hospitals; aged 63; died, April 1, of coronary sclerosis.

Nelson Ferguson McClinton, Saginaw, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1898; member of the Michigan State Medical Society; past president of the Saginaw County Medical Society; at one time mayor of Alma; member of the American Urological Association; on the staffs of St. Mary's, St. Luke's and Saginaw General hospitals; aged 67; died, April 8.

Joe Newton Sisk ✠ Madison, Wis.; Baylor University College of Medicine, Dallas, Texas, 1921; member of the Radiological Society of North America, Inc., and the American College of Radiology; member of the American Board of Radiology, Inc.; for many years associated with the Jackson Clinic; on the staff of the Methodist Hospital; aged 51; died, April 25, of cerebral hemorrhage.

James Frederic Clarke ✠ Fairfield, Iowa; University of Pennsylvania Department of Medicine, Philadelphia, 1889; fellow of the American College of Surgeons; an Affiliate Fellow of the American Medical Association; formerly mayor of Fairfield; veteran of the Spanish-American War and World War I; on the staff of the Fairfield County Hospital; aged 78; died, April 12, of uremia.

Sidney King Morrison ✠ Reno, Nev.; Cooper Medical College, San Francisco, 1902; member of the House of Delegates of the American Medical Association in 1924; formerly county physician; was chief medical examiner for the draft board during World War I; past president of the state board of medical examiners; aged 63; died, April 5, of carcinoma of the lung.

Lyston D. Howe, Streator, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; member of the Illinois State Medical Society; formerly county coroner; served in the Streator district in connection with the Selective Service System; aged 61; died, April 11, in St. Mary's Hospital of hemorrhage and duodenal ulcer.

Charles Maddox Hammett ✠ Washington, D. C.; Georgetown University School of Medicine, Washington, 1892; professor of ophthalmology emeritus at his alma mater; member of the American Board of Ophthalmology; fellow of the American College of Surgeons; on the staffs of the Providence and Georgetown University hospitals; aged 70; died, April 21.

Nelson McLaughlin, Detroit; Eclectic Medical Institute, Cincinnati, 1907; member of the Michigan State Medical Society; past president and secretary of the Michigan State Board of Registration in Medicine; served during World War I; aged 59; on the staff of the Highland Park (Mich.) General Hospital, where he died, April 8, of heart disease.

John Street Fulton, Topeka, Kan.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Kan., 1901; formerly health officer of Lyon County; public school physician; served during World War I; aged 69; died, April 10, in the Veterans Administration Facility, Wadsworth, of cerebral hemorrhage.

John Clement Cowden, Tonopah, Nev.; Pacific Coast Regular College of Medicine, San Francisco, 1900; veteran of the Spanish-American War; county health officer; formerly on the staff of the Tonopah Mines Hospital; aged 78; was burned to death, April 20, when his home caught fire from a faulty oil burner in the kitchen stove.

John Sherman Leffel ✠ Connersville, Ind.; Indiana University School of Medicine, Indianapolis, 1917; past president of the Fayette-Franklin Counties Medical Society; served during World War I; member of the school board; examining physician for the local Selective Service System; aged 53; died, April 20, of coronary thrombosis.

Harry Bayne Magee, Peoria, Ill.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; member of the Illinois State Medical Society; past president of the Peoria City Medical Society; member of the Radiological Society of North America, Inc.; aged 57; died, April 20, of rheumatic heart disease and mitral stenosis.

William Binford King ✠ Arlington, Va.; George Washington University School of Medicine, Washington, D. C., 1925; formerly associate professor of anatomy at his alma mater; assistant chief medical and liaison officer of the emergency medical service in the metropolitan area defense organization; aged 53; died, April 10.

James Frederick Hazlewood, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1907; medical officer on the Workmen's Compensation Board; formerly director of the Toronto Public Health Laboratories; served with the Canadian Army during World War I; aged 57; died, April 6.

Alice E. Kelly Higgins ✠ Rockville Centre, N. Y.; Tufts College Medical School, Boston, 1907; member of the American Academy of Pediatrics; on the staffs of the Brooklyn (N. Y.) Hospital, the Meadowbrook and Mercy hospitals, Hempstead; aged 58; died, April 28, of carcinoma of the breast.

Henry Charles Krohn, New Holstein, Wis.; Marquette University School of Medicine, Milwaukee, 1914; member of the State Medical Society of Wisconsin; for many years health officer of New Holstein; aged 59; died, April 15, in the Memorial Hospital, Sheboygan, of cerebral hemorrhage.

Walter Maurice Lacey ✠ Cheyenne, Wyo.; Harvard Medical School, Boston, 1912; served during World War I; formerly member of the state board of medical examiners; on the staff of the Laramie County Memorial Hospital; aged 58; died, April 6, of acute myelogenous leukemia.

John T. Lemmel, Beloit, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the draft board of Green County during World War I; aged 59; died, April 14, in the Beloit Municipal Hospital of coronary occlusion.

William Douglass Martin, Washington, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1892; member of the House of Delegates of the American Medical Association in 1919; formerly medical director of Washington County; aged 82; died, April 8, of pneumonia.

Orlando Conrad Hankison, Pine Bluff, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1892; member of the Arkansas Medical Society; past president and secretary of the Jefferson County Medical Society; aged 75; died, April 14, of hypostatic pneumonia.

John Wilson Frost, Lobelville, Tenn.; Memphis Hospital Medical College, 1913; served during World War I; formerly health officer of Humphreys and Obion counties; aged 55; died, April 22, in the Veterans Administration Facility, Memphis, of myocarditis and hypertension.

James Haydn Higgins, Marstons Mills, Mass.; College of Physicians and Surgeons, Boston, 1894; member of the Massachusetts Medical Society; aged 71; on the staff of the Cape Cod Hospital, Hyannis, where he died, April 7, of malignant tumor of the pituitary gland.

Merrill E. Liston ✠ South Bend, Ind.; University of Kansas School of Medicine, Kansas City, 1935; member of the American Society of Anesthetists, Inc.; aged 33; died, April 24, in the Epworth Hospital of abdominal carcinomatosis.

Jesse Myron Hays, Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1924; served during World War I; aged 46; on the staff of the White Cross Hospital, where he died, April 19, of lymphosarcoma.

Douglas S. Bonar, Newport, Ky.; Kentucky School of Medicine, Louisville, 1886; member of the Kentucky State Medical Association; aged 83; died, April 16, at his home in Southgate of coronary occlusion.

Edwin Gaillard Adams, Greensboro, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; member of the Medical Association of Georgia; served during World War I; aged 64; died, March 18.

Martin K. Kreider, Goshen, Ind.; Chicago Homeopathic Medical College, 1878; member of the Indiana State Medical Association; at one time county coroner; aged 95; died, April 16, of hypostatic pneumonia.

John Wade Chambliss, Americus, Ga.; Atlanta School of Medicine, 1907; member of the Medical Association of Georgia; was associated with the Prather Clinic; aged 61; died, April 5, of coronary occlusion.

Albert Lee Alderson, Pana, Ill.; University of Illinois College of Medicine, Chicago, 1913; served during World War I; aged 54; died, April 27, of injuries received in an automobile accident.

William Galvin, North Adams, Mass.; University of Vermont College of Medicine, Burlington, 1892; member of the Massachusetts Medical Society; aged 83; died, April 8, of arteriosclerosis.

Dan German Sr., Franklin, Tenn.; University of Nashville Medical Department, 1906; part owner of the German-Rice-Guffee Hospital; aged 66; died, April 20, of cerebral hemorrhage.

Christopher Fleming Keefe, Kingston, N. Y.; Bellevue Hospital Medical College, New York, 1878; aged 87; died, April 2, of cardiac hypertrophy with decompensation and arteriosclerosis.

Sydnor Lee Martin, Leaksville, N. C.; Baltimore Medical College, 1892; also a druggist; formerly member of the school board; for many years bank president; aged 78; died, February 21.

Edward Soule Dickey, East Chicago, Ind.; Western Pennsylvania Medical College, Pittsburgh, 1902; aged 67; died, April 14, in St. Catherine's Hospital of coronary thrombosis.

Bertrand Francis Dunn, Portland, Maine; Medical School of Maine, Portland, 1868; member of the Maine Medical Association; Civil War veteran; aged 98; died, April 11, of senility.

Jacob A. Grekin ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1908; aged 61; on the staff of the Montefiore Hospital, where he died, April 5, of coronary thrombosis.

Aaron Jeffery, Newport News, Va.; Medical College of Virginia, Richmond, 1884; member of the Medical Society of Virginia; aged 79; died, April 14, of carcinoma of the bladder.

Harvey H. Koons, New Castle, Ind.; Medical College of Ohio, Cincinnati, 1897; member of the Indiana State Medical Association; aged 68; died, April 4, of coronary occlusion.

Ralph Adolphus Butler ✠ Clinton, Iowa; State University of Iowa College of Medicine, Iowa City, 1912; aged 56; died, April 7, in Safety Harbor, Fla., of chronic myocarditis.

William Walter Smith, New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1895; aged 73; died, March 2, of myocarditis.

Charles Perry Clarke, Rochelle, Ill.; Chicago Homeopathic Medical College, 1897; served during World War I; aged 68; died, April 30, of coronary thrombosis.

Orestes A. Brownson, Los Angeles; St. Louis College of Physicians and Surgeons, 1906; served during World War I; aged 57; died, April 6, of coronary thrombosis.

Stanley Burton Minish ✠ Carrollton, Ky.; University of Cincinnati College of Medicine, 1941; aged 29; died, April 1, of a self-inflicted bullet wound.

William Henry Crowder, Kansas City, Mo.; University Medical College of Kansas City, Mo., 1903; aged 64; died, March 11, of myocarditis.

Charles Manning Keep, Brookline, Mass.; Harvard Medical School, Boston, 1888; also a dentist; aged 75; died, April 4, of cerebral thrombosis.

Irwin Hiram Le Barre, Mansfield, Ohio; Trinity Medical College, Toronto, Ont., Canada, 1897; aged 67; died, April 15, of coronary occlusion.

John De Witt Du Mond, Olivebridge, N. Y.; Bellevue Hospital Medical College, New York, 1886; aged 77; died, March 9, of nephritis.

Noah Montroville Robinson ✠ Vinton, Va.; Medical College of Virginia, Richmond, 1904; aged 66; died, March 5, of heart disease.

Aaron B. Grove, Shadygrove, Pa.; Jefferson Medical College of Philadelphia, 1880; aged 84; died, March 30, of chronic nephritis.

Abraham Lincoln Howe, Pacific Palisades, Calif.; Western Pennsylvania Medical College, Pittsburgh, 1894; aged 80; died, April 5.

Robert W. Dulaney, Johnson City, Tenn.; University of Louisville (Ky.) Medical Department, 1898; aged 70; died, April 5.

Louis Howell Beck, Glendale, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1885; aged 86; died, April 15.

Francis Osborne Tyler, St. Charles, Mo.; Meharry Medical College, Nashville, Tenn., 1927; aged 45; died, March 10.

Levi Hulbert Fuller, Pasadena, Calif.; Dartmouth Medical School, Hanover, N. H., 1888; aged 76; died, March 8.

William Francis Zander, Fort Meade, Fla. (licensed in Florida in 1914); also a minister; aged 88; died, March 12.

Robert M. Sterrett, Jamaica, N. Y.; College of Physicians and Surgeons of Chicago, 1890; aged 85; died, March 31.

Luther Pascal Bowers, Philadelphia; Medico-Chirurgical College of Philadelphia, 1900; aged 77; died, March 8.

Ella H. Griffith, Denver; Denver Homeopathic College, 1900; aged 79; died, April 11, of cerebral hemorrhage.

Harriet Bailey Clark, Altamont, N. Y.; Ohio Medical University, Columbus, 1906; aged 82; died, March 15.

David Westwood, Provo, Utah; College of Physicians and Surgeons, Baltimore, 1902; aged 71; died, March 8.

William Alfred Lawson, Halifax, N. S., Canada; Halifax Medical College, 1903; aged 66; died, January 11.

Lawrence James Dailey Jr., Albany, N. Y.; Albany Medical College, 1920; aged 45; died, April 17.

Walter Burgess, Pana, Ill.; Marion-Sims College of Medicine, St. Louis, 1897; aged 68; died, April 26.

James Stewart Morris, Stuart, Fla.; Harvard Medical School, Boston, 1888; aged 76; died in April.

Ira E. Sloan, Johnstown, Pa.; Baltimore Medical College, 1892; aged 74; died, February 6.

Correspondence

STATUS OF GASTRODUODENAL ULCER

To the Editor:—I have been much interested in the editorial in THE JOURNAL April 25 entitled "Status of Gastroduodenal Ulcer." It emphasizes a point which has not been particularly stressed in recent years, namely the effect of hypersecretion and hyperacidity on the ulcer patient. The editorial strongly suggests and marshals evidence to prove that just such an increase in the acidity and secretion of the stomach predisposes to ulceration, prolongs the attack and favors recurrence. With this view I am heartily in accord.

It is probably true that gastroduodenal ulcer is primarily a medical problem, but I think that we may now add another surgical indication for duodenal ulcer: persisting hyperacidity and hypersecretion. By some this may be included under the heading of intractability; but, as intractability is a broad, general, nonspecific term, it would seem to be far more scientific and definite to recognize the pathologic-physiologic state of hyperacidity and hypersecretion. I feel that it should be thoroughly emphasized that no one should treat duodenal or gastric ulcer without being cognizant of the state of the gastric secretion in every given patient and, unhappily, this is frequently not the case. Just as the chest internist and thoracic surgeon should be interested in and familiar with the pulmonary secretions which are raised by the patient, just as the urologist takes the personal trouble and pains to inspect the urine by the two glass test and examine it microscopically on many occasions, so should the internist and the surgeon dealing with gastric disorders be personally familiar with the gastric secretion in all its aspects. By so doing they will greatly enhance their ability to evaluate and treat their patients.

In closing, may I thank you for your splendid editorial and reemphasize the essentials which Sippy taught for a number of years: that the surgical indications for duodenal ulcer are complications, namely acute perforation, massive hemorrhage, cicatricial obstruction and intractability, which should include persisting hypersecretion and hyperacidity.

JESSE P. EDDY 3D, M.D., Providence, R. I.

TOXIC EFFECTS OF PHENYTOIN SODIUM

To the Editor:—The article on the toxic effects of phenytoin sodium by Drs. Isidore Finkelman and A. J. Arieff, which appeared in THE JOURNAL, April 4, had been read before the Chicago Neurological Society at its October 1941 meeting. I had the privilege of discussing the paper at that time and I should like to take this opportunity of referring to some of the points included in that discussion.

Most physicians who have had experience with phenytoin sodium are well aware of its toxic properties, but it would seem, to me at least, that the toxic symptoms which may result from it are not as frequent or as severe as the authors have indicated. Merritt described mild toxic symptoms as having occurred in about 15 per cent of his patients and more severe toxic symptoms in 5 per cent. The usual toxic signs and symptoms encountered are ataxia, dizziness, staggering, diplopia, nystagmus, nausea and vomiting and, at times, a slight fever. These symptoms usually occur about the tenth day of treatment and in the majority of cases will disappear when the dose of the drug is decreased. After the disappearance of these symptoms administration of the drug may be resumed either in a reduced dose or, in many cases, in the original dose without the recurrence of toxic symptoms. The ability to manipulate and vary the dosage in the face of toxic symptoms is probably the most important factor in reducing such symptoms and at the same time maintaining an effective anticonvulsant action. Some patients are not able to tolerate the drug even in very small doses, but fortunately such patients are rare.

The authors stated that "status epilepticus" was a toxic symptom of the ingestion of phenytoin sodium in some of their cases. After all, "status epilepticus" is a well known manifestation or symptom of epilepsy itself, and I do not see how the occurrence of such an outbreak can be attributed to phenytoin sodium just because the patient happens to be using the drug at the time. Certainly this condition occurs in patients who are being treated with other anticonvulsant drugs, and such drugs have not been accused of the responsibility. All know, furthermore, that "status epilepticus" may occur if phenytoin sodium is either suddenly withdrawn or substituted for another anticonvulsant drug which is suddenly withdrawn before the phenytoin sodium can be accumulated in the body. I should also question the statement that phenytoin sodium itself produced the peripheral neuritis which the authors listed as a toxic manifestation of the drug.

The authors referred to a case reported by Dr. Charles Aring and myself as illustrating the toxic effects of the drug (Ingestion of Large Doses of Dilantin Sodium, *Arch. Neurol. & Psychiat.* **45**:265 [Feb.] 1941): A boy took large doses of phenytoin sodium (60 and 70 capsules, or 6 and 7 Gm.) over a short period (ten hours) as a suicidal attempt. True, severe toxic symptoms developed, but he recovered. The case thus illustrates the high safety factor of the drug.

The mild toxic symptoms encountered are well compensated by the striking and gratifying anticonvulsant action of the drug in many cases.

MILTON ROSENBAUM, M.D., Cincinnati.

TREATMENT OF TYPHOID CARRIERS WITH IODOPHTHALEIN

To the Editor:—There appeared in a recent issue of THE JOURNAL (April 25, p. 1447) an article by Drs. Windsor C. Cutting and G. Bernard Robson entitled "Treatment of Typhoid Carriers." According to this paper, treatment of 5 typhoid carriers with soluble iodophthalein failed to cure the carrier state.

Although it is realized that the authors did not have knowledge of our recently published study (*ibid.*, March 21, p. 964), it appears that the reader of THE JOURNAL may be wrongly impressed with the value of such treatment. It is for this reason that we desire to make the following statements:

1. The iodophthalein treatment is not an all out cure of all typhoid carriers. Only a definite, well defined group of carriers will respond to treatment. These are carriers who present typhoid bacilli in their bile, as obtained by duodenal drainage, and a well functioning gallbladder, as determined by cholecystography.

2. Without first carrying out these two tests, treatment of typhoid carriers with iodophthalein appears irrational and uneconomical and may well bring the treatment into disrepute.

3. It is well realized that, the longer the typhoid carrier state persists, the more likely the gallbladder function will be found to be impaired. Furthermore, additional enteric foci may sometimes establish themselves in cases of long standing and serve as a cause of continuous bacillary excretion in spite of sterilization of bile. Therefore the iodophthalein treatment will be found of greatest value in carriers recently recovered from typhoid who have infected but otherwise not seriously damaged gallbladders.

WILLIAM SAPHIR, M.D., Chicago.
WALTER H. BAER, M.D., Manteno, Ill.
FREDERIC PLOTKE, M.D., Manteno, Ill.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, June 6, page 520.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Various centers, June 22-24. *Part III.* Various centers, June or July. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral. Groups A and B.* Cleveland, Jan. 14-15, 1943. Final date for filing application is Dec. 7. *Written.* Various centers, Nov. 16. Final date for filing application is Oct. 5. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 19. Final date for filing application is Sept. 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* Chicago, Oct. 9-10. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written.* Chicago, Jan. 9-10. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Richmond, Va., Nov. 9-10. Final date for filing application is Sept. 1. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 18. *Oral.* Chicago, Nov. 2-3. Final date for filing application is July 1. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, December. Final date for filing application is Oct. 1. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF UROLOGY: If a sufficient number of applications are received an examination will be held in the east at the same time or shortly after one of the national meetings. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis.

Minnesota January Report

The Minnesota State Board of Medical Examiners reports the written examination for medical licensure held at Minneapolis, Jan. 20-22, 1942. The examination covered 12 subjects and included 60 questions. An average of 75 per cent was required to pass. Forty-three candidates were examined, 42 of whom passed and 1 failed. Five physicians were licensed to practice medicine by reciprocity and 1 physician so licensed on endorsement of credentials of the National Board of Medical Examiners. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
Stanford University School of Medicine		(1939), (1941)	2
Yale University School of Medicine		(1940)	1
Northwestern University Medical School		(1941, 2)	2
Rush Medical College		(1939)	1
University of Illinois College of Medicine		(1941, 2)	2
University of Kansas School of Medicine		(1940)	1
Johns Hopkins University School of Medicine		(1940)	1
Harvard Medical School		(1939), (1940)	2
University of Minnesota Medical School		(1940), (1940),* (1941, 6), (1941, 12),* (1942)	21
University of Rochester School of Medicine and Dentistry		(1938), (1939)	2
Ohio State University College of Medicine		(1940)	1
University of Cincinnati College of Medicine		(1941)	1
Western Reserve University School of Medicine		(1938)	1
University of Pennsylvania School of Medicine		(1939)	1
Medical College of Virginia		(1940)	1
University of Manitoba Faculty of Medicine		(1940)	1
McGill University Faculty of Medicine		(1940)	1

School	FAILED	Year Grad.	Number Failed
University of Minnesota Medical School		(1941)	1

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University School of Medicine		(1936)	Missouri
The School of Medicine of the Division of the Biological Sciences		(1935)	Illinois
State University of Iowa College of Medicine		(1936)	Iowa
University of Minnesota Medical School		(1934)	New York
University of Nebraska College of Medicine		(1940)	Nebraska

School	LICENSED BY ENDORSEMENT	Year Grad.
Northwestern University Medical School		(1941)

*These applicants received the M.B. degree and will receive the M.D. degree on completion of internship.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Drunkenness: Evidential Value of Chemical Tests.—The defendant was convicted of murder and appealed to the Supreme Judicial Court of Massachusetts. During the trial of this case issue arose as to whether or not the deceased was drunk at the time of the altercation that led to his death. The trial court admitted in evidence the testimony of a witness who had examined and determined the percentage of alcohol present in the brain, blood and stomach contents of the deceased. This witness testified that the amount of alcohol found in the deceased would cause the average normal man of 49, the age of the deceased, to be definitely under the influence of liquor and to manifest some unsteadiness of motion. On appeal, the defendant assigned as error the admission of this testimony.

In the opinion of the court, it was not error to admit the testimony. The witness, since his graduation, had been engaged in biologic and chemical research and for many years had been the chemist of the Boston police department, working in conjunction with the medical examiners and their associates. He had worked on more than 140 cases for the department in matters involving blood stains and fibers and various problems relating to toxicology. On many occasions he had qualified and testified in courts of the Commonwealth as an expert in chemistry and biology. The record did not indicate, the court said, that at any time during the trial the defendant questioned the qualifications of this witness. Whether the witness possessed the qualifications adequate to enable him to testify as an expert rested in the first instance with the trial judge, and his decision is conclusive unless it appears from the evidence to be erroneous as a matter of law. Furthermore, the effect that a specified amount of alcohol found in a man's organs and bodily fluids would have on the steadiness of his gait was, in the opinion of the court, a proper subject for expert testimony. The opinions of experts as to the effect a certain amount of alcohol found by an analysis of the blood or urine would have on a person have been held competent in a number of cases.

The court could find no error in the record and the judgment of conviction was affirmed.—*Commonwealth v. Capalbo, 32 N. E. (2d) 225 (Mass., 1941).*

Medical Practice Acts: Codification of Laws No Bar to Revocation of License for Prior Unprofessional Conduct.—In 1937 the legislature of the state of California enacted a Business and Professions Code, thereby repealing the existing provisions of the medical practice act of 1913. Both the act of 1913 (section 14) and the Code of 1937 (section 2377), however, provided that a physician who procured an abortion should be deemed guilty of unprofessional conduct in the practice of his profession. On May 24, 1939 a complaint was filed before the defendant state board of medical examiners charging the plaintiff with certain designated acts allegedly constituting unprofessional conduct in the practice of medicine in that on three specified dates he had violated section 2377 of the Business and Professions Code of 1937. The acts charged against the plaintiff were all committed prior to 1937 and at a time when the medical practice act of 1913 was in effect. Accordingly the plaintiff filed a petition for a writ of mandate to restrain the board from holding any hearings on the complaint. From a judgment granting the writ, the defendant appealed to the district court of appeal, first district, division 1, California.

The plaintiff contended that the legal effect of the adoption of the Business and Professions Code in August 1937 repealing the medical practice act was to prohibit the institution of disciplinary proceedings for any offenses committed prior to that date. He further contended that this result followed even though the acts complained of constituted a violation of both the prior and the existing law. The plaintiff admitted, however, that the Business and Professions Code merely codified existing provisions of law and neither intended nor attempted

to change any of the substantive provisions of the medical practice act. It is a general rule of law, said the district court of appeal, that "When a statute, although new in form, reenacts an older statute without substantial change, even though it repeals the older statute, the new statute is but a continuation of the old." This rule is especially applicable to the codification of statutes and no saving clause, or other expression of legislative intent, is necessary. Consequently the court held that, independently of a saving clause, a person may be prosecuted under a repealed and reenacted statute, even though the offense was committed prior to the date of the reenactment.

The Business and Professions Code, however, contains a saving clause. Section 2 provides:

> The provisions of this code in so far as they are substantially the same as existing statutory provisions relating to the same subject matter shall be construed as restatements and continuations thereof, and not as new enactments.

Section 4 provides:

> No action or proceeding commenced before this code takes effect, and no right accrued, is affected by the provisions of this code, but all procedure thereafter taken therein shall conform to the provisions of this code so far as possible.

The plaintiff contended that section 2 was a general statute and that section 4 was a special statute, that a special statute controls a general one and that therefore only actions actually commenced and rights actually accrued under the medical practice act were saved. In other words, the plaintiff's argument was this: Without any saving clause the plaintiff could be prosecuted; with only section 2 the plaintiff could be prosecuted; with sections 2 and 4 the plaintiff could not be prosecuted because, by specifically saving actions commenced and rights accrued, the legislature impliedly prohibited all other prosecutions. The district court of appeal said that, whenever possible, all the provisions of a statute must be reconciled. No repugnancy existed between sections 2 and 4, continued the court, if section 2 was construed as a saving clause where no substantial change was made in the law and section 4 was construed as a saving clause in case some future legislature amended the law in some substantial manner. The plaintiff's argument completely abrogated section 2 and attributed to the act a meaning which the legislature did not intend. Said the court:

> We cannot believe that the legislature was so solicitous of doctors who had violated their responsibilities to the public and who had been false to their trust, that it intended to abrogate all prosecutions for offenses committed prior to the codification of the law. It is much more reasonable to assume that no such intent existed.

The judgment appealed from in favor of the plaintiff was accordingly reversed.—*Sobey v. Molony et al., 104 P. (2d) 868 (Calif., 1940).*

Dental Practice Acts: Validity of Restrictions on the Operation of Chain Dental Parlors.—Those provisions, said the Supreme Court of Washington, of the Washington dental practice act, which prohibit any person from conducting a dental office in his name or advertising his name in connection with any dental office or offices unless he is personally present in such office operating as a dentist or personally overseeing such operations as are performed during a majority of the time such office or each of such offices is being operated constitute a valid exercise of the police powers of the state and do not infringe on the equal protection and due process clauses of either the state or the federal constitution.

A statute enacted pursuant to the police power of the state cannot be held unconstitutional if it reasonably tends to protect the public welfare from a threat or menace of evil, even though the law operates to deprive a citizen of the right which he might otherwise enjoy to maintain a business, pursue a profession or endeavor to gain a livelihood, in the manner proscribed by law. The modern tendency of the courts is to restrict the authority of the legislature acting pursuant to the police power only when it clearly appears that constitutional rights are violated and courts will not interfere with the exercise of the legislative authority unless the statute should be held arbitrary and without a reasonable relation to any evil sought to be corrected or guarded against. In passing on the constitutionality of a statute enacted pursuant to the police power, it is not necessary that the court find the existence of a state of facts which would justify the particular statute in question; it is sufficient if it is deemed within the bounds of reasonable possibility that such a state of facts may exist. The safeguarding of the public health, and particularly the residents of the state as individuals, from the evils of incompetent and improper dental practices is beyond question a justifiable exercise of the police power of the legislature.

The provisions of the statute herein questioned must be considered with reference to the entire act of which it is a part. It may be presumed that, in the opinion of the legislature, the conduct of a dental office under the name of one who, although a licensed dentist, was not personally present in the office a majority of the time was a pernicious practice, tending to mislead persons patronizing such office in the expectation that the services sought and paid for would be personally rendered or supervised by the dentist whose name is held out to the public as conducting the office. It cannot be held that the legislature was mistaken in acting on that premise. The relationship between dentist and patient is inherently personal in the highest degree. Certainly it is within the province of the legislature to protect the public against all forms of fraud and deception tending to conceal the professional identity of the dentist who is in fact rendering the service in the particular office frequented by one in need of dental assistance. By the practice denounced by the act, the public may be unwittingly deprived of a personal relationship which may rightfully be expected and have another personality substituted therefor. The use of the name of a certain dentist as conducting an office for the practice of dentistry should mean something more than merely physical ownership of the office or the right to use the name, which may have a value because of long continued use or commercial advertising. It may well be that in respect to a particular individual the operation by him of more than one dental office would result in no harm to the public. The legislature, however, is entitled to consider and deal with the general problem of the commercial exploitation of the dental profession. If in the opinion of the legislature chain office dentistry and dental offices conducted under corporate or fictitious names, or under the name of a dentist who has nothing to do with the practice of the profession in connection with the carrying on of the office, tend to introduce into the profession unscrupulous practices which tend to lower the ethics and standards of the dental profession, to the injury of the health of the community and the public welfare, the legislature has the power to place the limitation in question on the general practice of the profession, even though in certain cases the act forbidden might not result in any of the evils which was believed might follow from the frequent employment of the forbidden practice.

The Supreme Court, accordingly, refused, in effect, to restrain the director of licenses of the state from preventing the plaintiff, a licensed dentist who operated a dental office under his own name in Seattle, from opening and operating, also under his own name, another office in Tacoma.—*Campbell v State, 122 P. (2d) 458 (Wash., 1942).*

Society Proceedings

COMING MEETINGS

American Association for the Study of Neoplastic Diseases, Baltimore, June 25-27. Dr. Eugene R. Whitmore, 2139 Wyoming Ave. N.W., Washington, D. C., Secretary.

American Gynecological Society, Skytop, Pa., June 15-17. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Physiotherapy Association, Lake Geneva, Wis., June 28-July 3. Miss Evelyn Anderson, Stanford University, Calif., Secretary.

Maine Medical Association, Poland, June 21-23. Dr. Frederick R. Carter, 142 High Street, Portland, Secretary.

Minnesota State Medical Association, Duluth, June 29-July 1. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Montana, Medical Association of, Missoula, July 8-10. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

New Mexico Medical Society, Santa Fe, June 25-28. Dr. L. B. Cohenour, 221 W. Central Avenue, Albuquerque, Secretary.

Pacific Northwest Medical Association, Portland, Ore., June 17-20. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Secretary.

West Virginia Medical Association, White Sulphur Springs, July 13-15. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

12:129-188 (March) 1942

Phenol Studies: I. Review of Literature: II. Quantitative Spectrophotometric Estimation of Free and Conjugated Phenol in Tissues and Fluids: III. Phenol Content of Normal Human Tissues and Fluids. W. Deichmann and L. J. Schafer, Cincinnati.—p. 129.

Pulmonary Ventilation in Health and Disease. A. T. Brice, San Francisco.—p. 144.

Determination and Distribution of Sulfathiazole in Blood. F. B. Cooper, P. Gross and M. L. Hagan, Pittsburgh.—p. 149.

Acute Isolated Myocarditis (Fiedler's Myocarditis): Case Report. G. W. Covey, Lincoln, Neb.—p. 160.

Specificity in Serodiagnosis of Syphilis: Differential Method. F. Rytz, Minneapolis.—p. 166.

Further Serologic Studies in Infectious Mononucleosis. R. Straus and M. T. Bernstein, Cleveland.—p. 174.

American Journal of Diseases of Children, Chicago

63:433-642 (March) 1942

Behavior Disorders Associated with Intracranial Tumors in Childhood: Report of Cases. W. S. Langford and W. O. Klingman, New York.—p. 433.

Whooping Cough Vaccine. Leila Daughtry-Denmark, Atlanta, Ga.—p. 453.

Spread of Poliomyelitis Virus Along Axons of Peripheral Nerves. J. A. Toomey and W. S. Takacs, Cleveland.—p. 467.

*Toxoplasmic Encephalomyelitis: V. Further Observations of Infantile Toxoplasmosis; Intrauterine Inception of Disease; Visceral Manifestations. B. H. Paige, D. Cowen and A. Wolf, New York.—p. 474.

Nutritional Edema in Children. Ji Chen, Shanghai, China.—p. 552.

Toxoplasmic Encephalomyelitis.—Paige and his associates report 3 cases of infantile toxoplasmic encephalomyelitis and record the finding of Toxoplasma in reexamined sections of the brain in a previously reported case of chronic acquired hydrocephalus with meningoencephalitis of undetermined cause. The first patient with toxoplasmic encephalomyelitis, a white female slightly premature infant who died at 9 weeks, was noticed, two hours after birth, to have a progressively increasing hydrocephalus. Cerebral calcification was present on the sixth day, microphthalmos and membranous masses in the vitreous of each eye during the second and third weeks of life, the spinal fluid showed xanthochromia and a high protein content and there were tremors and convulsions late in the course. Necropsy revealed a diffuse necrotizing encephalomyelitis, miliary granulomas and extensive calcification. Toxoplasmas were present in the lesions of the brain, spinal cord and eyes, and mice inoculated with cerebral tissue acquired a typical murine toxoplasmosis. The second case establishes the fact that the infantile form of the infection may be prenatal in origin. The infant had given evidence of hydrocephalus in utero, necessitating craniotomy for delivery. The child, born at term, was normally developed except for the enlarged head and was viable up to the time of delivery. On pathologic examination the stillborn child presented an advanced toxoplasmic encephalomyelitis with extensive calcification of the lesions and an associated chorioretinitis. Toxoplasmas were found in the cardiac and striated muscle fibers and in cells of the adrenal cortex. The third patient, who died at 3½ days of age, is of interest because of the widespread involvement of organs other than the nervous system and the less advanced state of the neural lesions. Necropsy revealed toxoplasmas in the lungs, heart, brain, adrenals, ovaries, thyroid, striated muscles and adipose tissue. These had given rise to interstitial pneumonia, to acute diffuse myocarditis, to encephalomyelitis characterized by focal necrotizing and inflammatory lesions and miliary granulomas and to focal lesions in the adrenals and ovaries. In the other organs in which they were present, the parasites produced no reaction. Diagnosis should be rendered possible during life by the following data: (1) onset of symptoms at birth or early infancy, (2) varied neurologic symptoms, (3) chorioretinitis, (4) roentgen demonstration of intracerebral calcification, (5) determination of clinically inapparent internal hydrocephalus by pneumoencephalography, (6) xanthochromia, round cell pleocytosis and high protein content of the cerebrospinal fluid, (7) recovery of toxoplasmas from the blood or cerebrospinal fluid by inoculation of mice and/or rabbits and (8) demonstration of Toxoplasma-neutralizing antibodies in the blood of the infant or of the mother.

American Journal of Medical Sciences, Philadelphia

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*Autohemolysinic Anemia with Autoagglutination: Improvement After Splenectomy. E. H. Reisner Jr. and M. Kalkstein, New York.—p. 313.

*Chronic Leukemia in Three Sisters. J. H. Hornbaker, Hagerstown, Md.—p. 322.

*Normal Plasma Coagulation Time. G. Cheney, San Francisco.—p. 325.

Effect of Parity on Average Blood Pressure and on Incidence of Hypertension. C. E. Isenhour, K. Kuder and L. V. Dill, New York.—p. 333.

Primary Thrombosis of Axillary and Subclavian Vein. L. Pelner and I. Cohn, Brooklyn.—p. 340.

Effect of Barbituric Acid Derivative on Lobeline Circulation Time. K. Berliner and A. Lilienfeld, New York.—p. 349.

Electric Convulsion Therapy in Psychoses. D. Goldman and E. A. Baber, Cincinnati.—p. 354.

Assimilation Rate of Intravenously Injected Glucose in Hospital Patients. J. C. Cain, Rochester, Minn., and W. P. Belk, Philadelphia.—p. 359.

Fatal Hyperinsulinism with Cerebral Lesions Due to Pancreatic Adenoma. A. J. Kerwin, Toronto, Canada.—p. 363.

Prognosis of Pneumococcic Meningitis Treated with Chemotherapy. G. Hollander, Philadelphia.—p. 370.

*Pneumococcic Capsular Polysaccharide and Antibody in Pleural Exudates. P. F. de Gara, J. G. M. Bullowa and S. C. Bukantz, New York.—p. 376.

Method of Determining Probability of Constitutional Reactions During Treatment of Ragweed Hay Fever Patient. W. B. Sherman and S. Hebald, New York.—p. 383.

Studies on B Vitamins in Human Subject: IV. Mental Changes in Experimental Deficiency. Harriet E. O'Shea, Lafayette, Ind.; K. O. Elsom, with technical assistance of Ruth V. Higbe, Philadelphia.—p. 388.

Chancre of Gum: Case Report. J. F. Sadusk Jr. and B. G. Anderson, New Haven, Conn.—p. 397.

Duration of Action and Activity of Different Size Doses of Protamine Zinc Insulin. Helen Eastman Martin and P. O. Greeley, Los Angeles.—p. 402.

Observations on Oral Administration of Citrated Blood in Man: II. Effect on Stools. L. Schiff, R. J. Stevens, N. Shapiro and S. Goodman, Cincinnati.—p. 409.

Calcium Bile: Clinical and Pathologic Study. M. McCall, New York, and A. Tuggle, Charlotte, N. C.—p. 413.

Diagnosis, Incidence and Significance of Essential Achlorhydria. A. Winkelstein, New York.—p. 419.

Immediate Feeding versus Initial Starvation in Treatment of Bleeding Peptic Ulcer. J. P. Eichhorn, Cleveland.—p. 428.

Autohemolysinic Anemia with Autoagglutination.—Reisner and Kalkstein encountered a case of acute hemolytic anemia apparently due to the spontaneous action of autohemolysins within the body. The case fulfilled the criteria for such a diagnosis. There were icterus, anemia, hemoglobinuria, microcytosis and definite evidence of new blood formation with reticulocytosis. There was no evidence of parasitic infestation or of exposure to a toxic agent which could cause the anemia. Therefore the case is regarded as one of acute hemolytic anemia due to the spontaneous action of some intrinsic factor, an autoantibody. Autohemolysin, which was undoubtedly active, could not be demonstrated in vitro owing to the overwhelming presence of an autoagglutinin whose action persisted at body temperature, and it could not be split off from the erythrocytes. The unusually high titer of the agglutinin was probably due to repeated transfusion reactions with hemolysis of blood and liberation of more antigen. The factor that precipitated the initial hemolysis remains unknown, but a vicious circle was established: the hemolysis necessitated transfusion, which in turn led to increased hemolysis. The only treatment that could break this cycle was splenectomy. This proved correct as the patient was given transfusions without a reaction in spite of a persistently high autoagglutinin titer. This also suggests that the spleen was the actual site of hemolysis. Fifty-four cases of autoagglutination are reported in the literature.

Chronic Leukemia.—Hornbaker reports 3 cases of leukemia in 3 sisters in an unusual combination: in 2 of them it was of the lymphatic and in 1 of the myelogenous type. The history of the remainder of the family (parents, other siblings and the patients' children) does not reveal or suggest a blood dyscrasia.

Normal Plasma Coagulation Time.—Cheney determined the coagulation time of the plasma of 340 normal adults and of 107 patients with nonhemorrhagic disorders to test the serviceability of the test for vitamin K deficiency. A clean venipuncture must be performed, and the blood withdrawn must be rapidly transferred to a test tube containing a weighed amount of dry potassium oxalate in the ratio of 10 mg. to 5 cc. of blood. The oxalate must be thoroughly mixed with the blood by inverting the corked tube ten or fifteen times. The oxalated blood is centrifuged in a constant speed centrifuge at 3,500 revolutions per minute for five minutes, and the plasma is pipetted off and then 0.2 cc. of the plasma is pipetted into each of two small chemically clean test tubes and 0.2 cc. of 0.4 per cent calcium chloride is added to the first tube and 0.1 cc. to the second. The tubes should be shaken gently five to ten times. The coagulation time of the plasma should be read in minutes. The end point is taken when the solution no longer flows when the test tube is held horizontal. The shortest time of coagulation for the two tubes is the plasma coagulation time. The room temperature at the time the test is carried out should be recorded; a variation between 23 and 26 C. causes no gross variation in the test. The test should be completed within the first hour after the venipuncture. The results of the plasma coagulation time of the 340 normal individuals show that clotting occurs in 86.35 per cent in four to seven minutes; the average for the group was five and one-fourth minutes. The trend for the curves for the 107 patients with nonhemorrhagic disease is similar with few exceptions. The short time of two minutes was more than twice (four as against five in the normal group) as common and a prolonged coagulation time above the normal upper limit of eight minutes in 6 patients as against 17 normal controls. Of 2 patients with times of nine minutes, 1 was suffering from prolonged malnutrition and 1 was receiving sulfanilamide therapy for a streptococcic sore throat, 1 patient with a time of ten minutes suffered from severe allergy, 1 with a time of twelve minutes had chlorotic achlorhydric anemia and 2 patients with a time of thirteen minutes were malnourished. It is evident that occasionally a patient may have a disturbed plasma coagulation time without evident hepatic or biliary tract disease, hemophilia or purpura. The constancy of the results warrants the use of the plasma coagulation time as a simple laboratory test, provided the physical conditions are closely adhered to.

Pneumococcic Capsular Polysaccharide.—Gara and his associates record studies on the diagnostic and prognostic significance of pneumococcic capsular polysaccharide and of agglutinative and precipitative antibodies in 44 specimens of pleural exudate from 27 patients with pneumococcic pneumonia. The observations were correlated with other bacteriologic, immunologic and clinical data. An attempt was made to determine the type of pneumococcus responsible for an illness by identifying with pooled serums the specific capsular polysaccharide in the pleural exudate. The results indicate that the detection of capsular polysaccharide in "sterile" pleural effusion may reveal the pneumococcus type involved. The mortality rate for the group was 29.7 per cent, or 8 deaths, in 6 of which capsular polysaccharide was detectable. This indicates the desirability of performing various tests on body fluids, because capsular polysaccharide may be found in the blood when no organisms can be detected. Twenty-four pleural exudates from 16 patients were positive on culture and contained detectable capsular polysaccharide but no antibody. Capsular polysaccharide was found in 6 sterile pleural fluids from 4 patients. On one occasion the pleural culture was positive. Fourteen fluids from 9 patients were negative on culture and contained no capsular polysaccharide; in 8 of these fluids (from 4 patients) antibodies could be detected. More recoveries (8 of 11) occurred in thoracotomized patients who had had bacteremia than in those given repeated thoracenteses (11 of 16). The blood, pleural exudate and urine of 9 patients were studied for capsular polysaccharide, and it was detectable in 7 pleural exudates, in 5 urines after concentration and in 2 bloods. Pooled serum was satisfactorily used for the detection of capsular polysaccharide in pleural exudates. The same optimal concentrations of antibody are used for detecting capsular polysaccharide in the pleural exudate as are used for urine, broth and plasma.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

26:133-264 (March) 1942

Comparative Effectiveness of Neoarsphenamine, Sulfathiazole, Sulfadiazine, Sulfapyridine, Sulfanilamide and Other Sulfonamide Drugs Against Neisseria Gonorrheae in Marrow Cultures. E. E. Osgood, Portland, Ore., with technical assistance of Inez E. Brownlee.—p. 133.
Studies on Role of Spirocheta Pallida in Wassermann Reaction: III. Complement Fixation and Agglutination in Syphilis with Antigens of Tissue Spirocheta Pallida. J. A. Kolmer, Clara C. Kast and Elsa R. Lynch, Philadelphia.—p. 142.
Note on Survival of Treponema Pallidum in Preserved Citrated Human Blood and Plasma. J. A. Kolmer, Philadelphia, with technical assistance of Anna M. Rule.—p. 156.
Bismuth Excretion and Storage in Rabbits After Oral and Intramuscular Administration of Sobisminol Solution and Water Soluble Potassium Bismuth Tartrate. H. Brown and J. A. Kolmer, Philadelphia.—p. 159.
Study of Certain Factors Influencing Absorption of Water Soluble Bismuth Compounds. R. C. Sproull and R. A. Lehman, New York.—p. 166.
*Analysis of Deaths Following Therapeutic Malaria: Study of Twenty-Nine Cases. U. J. Wile and L. K. Mundt, Ann Arbor, Mich.—p. 181.
Significance of Pus Cells in Smear Diagnosis of Gonococcic Infection. A. Steer, New York.—p. 191.
Use of Dry Ice in Shipment of Material for Gonococcus Cultivation. E. S. Sanderson and G. G. Allison, Atlanta, Ga.—p. 196.
New Preparation of Antigen for Intracutaneous Diagnosis of Chancroidal Infection. R. B. Dienst, Augusta, Ga.—p. 201.
*Treatment of Early Syphilis by Massive Dose Method. N. E. Berry, Kingston, Ont., Canada.—p. 204.
Seasonal Injuries of Liver and Kidneys Due to Neoarsphenamine. A. J. Nedzel, Chicago.—p. 209.
Reinfection in Congenital Syphilis. S. D. Allison, Baltimore.—p. 212.
Gastric Lesions Associated with Early Syphilis. F. W. Reynolds, Portsmouth, Va.—p. 218.
Effect of Immunization with Extracts of Syphilitic Tissue on Course of Experimental Syphilis in Rabbits. E. K. Stratton, San Francisco.—p. 227.
Agglutination of Suspensions of Bentonite by Syphilitic Serums. E. L. Breazeale, Tucson, Ariz.—p. 231.
*Combined Artificial Fever, Chemotherapy and Vaccinotherapy in Treatment of Neurosyphilis: Three and One-Half Years' Report. A. Marin, Montreal, Canada.—p. 234.
Study of Gonococcic Vaginitis in Institution for Mental Defectives. A. Cohn, A. Steer, New York; H. C. Storrs and J. K. Pettit, Thiels, N. Y.—p. 241.

Deaths Following Therapeutic Malaria.—Since 1925 there have been 29 deaths among the 1,026 patients with neurosyphilis submitted to inoculation malaria. The deaths occurred during or immediately after the paroxysms. Wile and Mundt point out that sudden peripheral circulatory failure or vascular collapse accounted for 12 of the deaths. The collapse was unpredictable; it appeared early in the course of paroxysms in some patients and toward the end of the fever in others. Necropsies were performed on 6 of these patients and, except for 1 patient who had syphilitic heart disease with an aortic aneurysm, nothing was found to account for death. The death of 5 patients could be attributed either directly or indirectly to extreme hyperpyrexia. Five patients died from pneumonia confirmed by clinical signs and roentgen study. Only 1 other patient died from an intercurrent acute infection, erysipelas, which developed at the puncture site at which typhoid bacilli were injected intravenously. The death of 1 of the remaining patients was due to cerebral thrombosis, of 2 to internal hemorrhagic exsanguination, of 1 to suicide and of 1 to respiratory failure with convulsions.

Treatment of Early Syphilis by Massive Dose Method.—Since November 1939 Berry has treated 50 patients within three months of acquiring syphilis with massive doses of mapharsen. He has found it convenient to dissolve 60 mg. of mapharsen in a 500 cc. flask of distilled water, to which is added a 50 cc. ampule of 50 per cent dextrose. This is given in about three hours by continuous drip. Four such doses constitute the day's treatment. The patient is given a high carbohydrate diet and encouraged to take fruit juices. The treatment has usually been well tolerated. Nausea in 35 per cent, associated with vomiting in 30 per cent, was the most frequent disturbance. One treatment may not give a complete cure, and prolonged follow-up is just as important as with other methods of treatment. Unfortunately, many of the early patients

were soldiers who are now overseas. However, the author knows that 2 of them who were seronegative became positive during treatment but reverted to negative and were still negative six months later. A third patient who was seronegative remains so a year after treatment. A close follow-up was maintained of 19 patients with secondary syphilis, all of whom were treated more than six months ago. Ten of these became negative after six weeks, and all except 1 were negative after three months and have remained so to date. Five patients have now been under observation for more than a year, and 1 treated in November 1940 is still seropositive and must be considered a treatment failure. Although sufficient time has not elapsed to determine the permanence of serologic reversal, the author feels certain that the massive dose method constitutes a real advance in the treatment of syphilis. Although its present form may not be accepted, some modification of it will become the treatment of choice for early syphilis.

Treatment of Neurosyphilis.—According to Marin, artificial fever therapy combined with chemotherapy, and vaccines as an adjunct for inducing hyperpyrexia, has been given to 265 patients with no deaths. Of 58 patients with dementia paralytica 46 per cent obtained a complete remission. Nine of 22 patients with tabes were definitely improved, as were 6 of 9 with tabes and dementia paralytica. Of 7 patients with meningovascular neurosyphilis, 3 recovered and 1 was improved. Of 173 patients who received one complete course of hyperpyrexia, vaccines and chemotherapy, the spinal fluid became immediately negative in 6 (4 per cent). Of 84 patients who subsequently received twelve months of chemotherapy (following artificial fever), the spinal fluid became negative in 17 per cent. Of 34 patients treated for twenty-four months with chemotherapy following the hyperpyrexia course, the spinal fluid became negative in 18 per cent. The spinal fluid of 3 of 9 patients treated for three years has become negative.

Annals of Surgery, Philadelphia

115:321-480 (March) 1942

*Early Skin Grafting in War Wounds of Extremities. J. M. Converse, New York.—p. 321.
Brain Abscess of Uncommon Origin—Relation to Osteomyelitis of Skull: Clinicopathologic Study. V. W. Eisenstein, Pittsburgh; E. D. Friedman and C. Davison, New York.—p. 336.
*Gastric Polyposis: Report of Case of "Polyadenomes en Nappe," Diagnosed Gastroscopically. W. G. Heeks and W. T. Gibb, New York.—p. 356.
Adenoma of Pancreas: Case Reports. S. S. Quarrier and C. T. Bingham, Hartford, Conn.—p. 363.
Management of Ureteral Calculi. C. C. Higgins, Cleveland.—p. 369.
Malignant Tumors Developing in Sacrococcygeal Teratomas. H. Lisco, Baltimore.—p. 378.
Studies on Blood Histamine in Cases of Burns. B. Rose and J. S. L. Browne, Montreal, Canada.—p. 390.
*Study of Weight of Celiac Ganglion and Its Relationship to Essential Hypertension: Report on 201 Celiac Ganglions. M. O. Cantor, Detroit.—p. 400.
Malignant Tumors of Synovial Origin. C. D. Briggs, Washington, D. C.—p. 413.
Choice of Bone Graft Methods in Bone and Joint Surgery. R. K. Ghormley, Rochester, Minn.—p. 427.
Interinnomino-Abdominal Amputation: Case Report. A. H. Whittaker and D. J. Sobin, Detroit.—p. 435.
Operative Treatment for Recurrent Dislocation of Shoulder. S. Wahl, New York.—p. 441.
Subtalar Dislocations: Case Report of Inward Type. R. A. Wise, New York.—p. 445.
Third Phase of Surgery: Total Sterilization as Basis of Integral Asepsis and of Pasteurian Cicatrization. M. Gudin, Rio de Janeiro, Brazil.—p. 452.

Early Skin Grafting for War Wounds of Extremities.—Converse believes that many complications following extensive skin losses with their consequent delay in the patient's return to work or duty could be prevented by the early replacement of lost skin by grafting. When a considerable loss of superficial tissue exists, healing may be incomplete and of poor quality. When bone is exposed through the loss of superficial covering and periosteum, it becomes devitalized and sequestrated and is open to infection and osteomyelitis. A tendon left uncovered is destined to slough. The pathologic picture of an unhealed wound is one of gradually diminishing blood supply, progressive increase of fibrous tissue and retarded epithelial growth. This can repeat itself indefinitely. Therefore the rapid covering of a wound by epithelium appears desirable. Skin grafting is indicated when the cutaneous loss is such that function may be impaired when spontaneous healing appears improbable and when rapid healing is desirable. Skin grafting makes secondary nerve suture or grafting, tendon suture or bone surgery possible earlier. One hundred and ten skin grafting operations were performed two to nine months after injury on infected granulating wounds. Aside from the technical details of fixation and adequate pressure, wound infection which creates suppuration and wound fibrosis which diminishes the local blood supply influence the success of skin grafting. Therefore, particularly in older wounds, it seems preferable to excise the wound whenever possible to obtain a vascular base for the graft. When secondary wound excision was done the occurrence of skin graft take was 88 per cent in 54 cases. (A complete take was spoken of as 100 per cent.) When this was not done the occurrence of skin graft take was 52 per cent in 56 cases. In 22 instances of the latter group the granulating layer was superficially excised or scraped, exposing the fibrous layer before grafting, and in these cases the skin take was 68 per cent. Skin grafting is generally unsuccessful when acute hemolytic streptococcus infection is present. By the local use of chemotherapy it has become possible to obtain wounds free from streptococci within a few days when skin grafting is possible. Eighty-one of the 110 patients with granulating wounds harbored hemolytic streptococci at some time. Wounds containing Bacillus pyocyaneus should be excised before grafting is attempted. The staphylococcus influences the take only in proportion to the amount of exudate present in the wound. When secondary débridement, that is, excision of the whole wound, is not possible the wound must be freed from suppuration and good local circulation brought about by other means such as moist dressings, the Bunyan envelop, firm elastic pressure, avoidance of the dependent position and complete immobilization. Skin grafts are not successful over bone deprived of periosteum. In such cases it is necessary to cover exposed structures with a flap of skin consisting of subcutaneous tissue and fat. The immediate covering of tendon is imperative to prevent sloughing.

Gastric Polyposis.—Heeks and Gibb report the occurrence of gastric polyposis in a woman of 35 whose condition was diagnosed as gastroscopy and confirmed at operation. The patient's chief complaint for nine years was epigastric pain one hour after eating. Alkalis gave no relief. Dietary regimens, which she did not conscientiously follow, gave temporary relief. A bland diet and bismuth and soda powders gave prompt relief. On gastroscopic examination the rugae of the entire posterior wall extending distally to the angulus were finger-like in size, velvety, finely nodular and congested, resembling cerebral convolutions. At operation the stomach was seen to be hypertrophied. An indurated, whitish spot on the anterior surface of the duodenum proved to be a chronic ulcer. When the stomach was opened, the mucous membrane of the posterior wall was found to be hypertrophied and lying in succulent folds. There was no evidence of carcinoma or of metastasis. After partial gastric resection a retrocolic Pólya type of gastrojejunostomy was performed. Microscopically a portion of the normal mucous membrane of the stomach and also the tall, branching and overhanging rugae simulated a papillary adenomatous growth. The patient made excellent progress and when last seen, one year after operation, she felt fine, had no gastric symptoms and had gained 14 pounds (6.3 Kg.).

Celiac Ganglion and Hypertension.—There are three surgical concepts (hyperepinephrinemic, neurogenic and hereditary) of the etiology of essential hypertension and consequently three surgical approaches. Cantor proposes to determine the validity of the last concept, that of Crile, who states that "only those individuals who have by inheritance large celiac and aortic ganglia can and do have hypertension," by testing the relationship of the size of 201 celiac ganglions to essential hypertension. The left celiac ganglion was larger than the right, sometimes two to three times as large. Most of the large ganglions weighing around 1,000 mg. or more were obtained from patients with a blood pressure well within the normal range. The ganglions from hypertensive patients actually weighed somewhat less. The largest ganglion weighed 2,100 mg. and was found in a nonhypertensive individual, whereas the largest ganglion found in

a hypertensive individual weighed 1,250 mg. Both of these ganglions were on the left side. The largest right celiac ganglion from a nonhypertensive subject weighed 1,950 mg., while the heaviest right celiac ganglion from a hypertensive patient weighed 1,225 mg. The average weight of the left celiac ganglion from nonhypertensive subjects was 968.4 mg. and for the right it was 745 mg., and the average weight for the ganglions from hypertensive patients was respectively 867.9 and 674.4 mg. The celiac ganglions increase in size from birth until the age of 40 to 55. After this their weight declines gradually until in the octogenarian their weight is near the childhood level. The largest ganglions were found in the male sex. Apparently there is no relationship between the weight of the celiac ganglions and essential hypertension.

Archives of Ophthalmology, Chicago

27:443-636 (March) 1942

Position of Muscles After Operation for Strabismus. S. R. Gifford, Chicago.—p. 443.
Visual Test Card Designed for Use in Examinations for Armed Forces: More Refined Means for Differentiating Between Class 1-A and 1-B Registrants. J. I. Moore, Baltimore.—p. 460.
The Cornea: I. Transfer of Water and Sodium Chloride by Osmosis and Diffusion Through Excised Cornea. D. G. Cogan and V. E. Kinsey, Boston.—p. 466.
Marfan's Syndrome (Arachnodactyly Coupled with Dislocation of Lens). A. Rados, Newark, N. J.—p. 477.
Carotid-Cavernous Aneurysm. H. E. Crawford, Hilo, Territory of Hawaii.—p. 539.
Cyclodiathermy: Operation for Treatment of Glaucoma. C. H. Albaugh, New York, and E. B. Dunphy, Boston.—p. 543.
Rhabdomyosarcoma of Orbit. F. P. Calhoun Jr., Atlanta, Ga., and A. B. Reese, New York.—p. 558.
Control of Pain in Acute Iridocyclitis with Isoamylhydrocupreine. P. A. Richter, Dallas, Texas.—p. 579.
*Mustard Gas Injuries to Eyes. W. F. Hughes Jr., Baltimore.—p. 582.

Mustard Gas Injuries to Eyes.—The present treatment of ocular injuries due to mustard gas—dichlorodiethylsulfide—Hughes states, is largely symptomatic; it helps prevent the development of secondary complications. By opening the swollen lids the patient can be assured that he is not blind. Local anesthetics should be avoided, however; if necessary for examination, 1 drop of a 5 per cent isotonic solution of pontocaine may be instilled. The eye should be irrigated for two minutes with a 1.5 per cent solution of sodium bicarbonate, isotonic solution of sodium chloride, a 2 per cent solution of boric acid or a 0.5 per cent solution of dichloramine-T in chlorinated petrolatum. For patients with corneal involvement or extreme photophobia a 1 per cent atropine solution or ointment should be instilled every day until the symptoms subside. When the involvement is severe, drops or an ointment of liquid petrolatum, cod liver oil with added sodium bicarbonate and dextrose or acriflavine in castor oil 1:15,000 should be instilled three times a day. Dark glasses or a brown eye shade should be used, but only for a short time. Bandages or eye pads should be avoided. Finally a 10 per cent mild protein silver solution, followed by irrigation with boric acid solution, should be instilled three times a day. A 0.25 per cent solution of zinc sulfate with epinephrine should be used during convalescence. As yet no satisfactory neutralizing agent for mustard gas that is tolerated by the eye is available; therefore as soon as the faint, transitory mustard or garlic odor is detected or the presence of mustard gas is suspected the gas mask should be put on. In addition to wearing gas masks, workers in England's mustard factories should irrigate their eyes several times a day with sodium bicarbonate or boric acid solution. The oily secretion of the meibomian glands and the moist surfaces of the conjunctiva and cornea make the eye all the more sensitive to the vapor of mustard gas. In field dressing stations, attendants should don gas respirators before decontaminating patients and their clothes.

Bulletin New York Academy of Medicine, New York

18:163-234 (March) 1942

Thromboangiitis Obliterans. E. V. Allen, Rochester, Minn.—p. 165.
Effects of Renal Extract on Hypertension. A. Grollman, Baltimore; J. R. Williams Jr. and T. R. Harrison, Nashville, Tenn.—p. 190.
Use of Insulin in Its Various Forms in Treatment of Diabetes. E. P. Joslin, Boston.—p. 200.
Diabetes in Pregnancy. H. O. Mosenthal, New York.—p. 217.

Canadian Medical Association Journal, Montreal

46:209-306 (March) 1942

*Surgical and Gynecologic Experiences with Emulsion of Sulfathiazole. D. Ackman and G. Wilson, Montreal.—p. 209.
Effect of Synthetic Hemorrhagic Agents, 3,3'-Methylene-Bis-(4-Hydroxycoumarin), in Prolonging Coagulation and Prothrombin Time in Human Subject. S. R. Townsend and E. S. Mills, Montreal.—p. 214.
Care of Patients with Biliary Disease. E. C. Cutler, Boston.—p. 218.
Electrocardiographic Records of 2,000 Royal Canadian Air Force Aircrew. G. E. Hall, C. B. Stewart and G. W. Manning, Ottawa, Ont.—p. 226.
Improved Radical Technic for Carcinoma of External Genitalia in Female. H. W. Johnston, Toronto.—p. 230.
Atrioventricular Nodal Paroxysmal Tachycardia in Infant Treated with Acetyl Beta-Methylcholine. H. N. Segall and A. Goldbloom, Montreal.—p. 233.
*Parathyroid Insufficiency in Wilson's Disease. R. Altschul and J. S. Brown, Saskatoon, Sask.—p. 237.
Anesthesia in War Circumstances. W. Bourne, Westmount, Que.—p. 241.
Intestinal Decompression (Collective Review). G. F. Skinner, St. John, N. B.—p. 245.
Treatment, Pathology and Prevention of Mental Disorders in Aged. G. E. Reed and K. Stern, Montreal.—p. 249.
Diagnostic Value of Plasma Proteins. A. T. Cameron and F. D. White, with technical assistance of Marion Ferguson and Catherine Gibson, Winnipeg, Man.—p. 255.
Acute Otitic Meningitis: Chemotherapy Advances. K. Hutchison, Montreal.—p. 261.
Orthoptic Treatment of Strabismus. J. McGillivray, Winnipeg, Man.—p. 265.
Some Observations on History of Orthoptics. F. A. Macneil, Winnipeg, Man.—p. 268.

Sulfathiazole Emulsion.—A liquid emulsion made up of 5 per cent of finely powdered sulfathiazole, 2 per cent of triethanolamine, 24 per cent of water, 5 per cent of beeswax and 64 per cent of liquid petrolatum was used by Ackman and Wilson in 25 cases in which curtain drainage was required (for wounds, abscesses, carbuncles, open amputations and ulcers), in 19 cases of burns and for vaginal packing as an adjunct to surgery. The results in all instances were most gratifying. To get the best results from curtain drainage packing gauze impregnated with the emulsion should be packed tightly into the interstices of the depths of the cavity of the abscess or wound: and from this point less tightly toward the surface so that the packing does not act as a cork. Slow continuous drainage with bacteriostatic action is thus provided. The removal of a pack may be delayed for a number of days, during which time there is little or no odor. There is no undesirable caking or crusting. The use of sulfathiazole emulsion for burns is advocated because it meets with the requirements of flexibility and bacteriostatic action. The dressings absorb secretions, do not require frequent changes, are soothing and, because they are soft and nonadherent, they cause little pain on removal. They are relatively odorless and cause minimal bleeding when changed. The progress of healing may be viewed easily, as the burned area is clean and not macerated. In using the sulfathiazole emulsion pack in gynecologic surgery the vagina is packed in much the same way as with acriflavine gauze. The vagina should be free of alcohol before it is packed with sulfathiazole. The effect of the drug probably lies in its early application; postoperative fever due to infection at the operative site has been reduced, and healing has not been retarded. The pack does not cake or dehydrate the vagina, and there is no odor from the vagina or the removed pack.

Parathyroid Insufficiency in Wilson's Disease.—Altschul and Brown report the occurrence of hepatolenticular degeneration in 4 brothers. In 2 there was evidence of parathyroid insufficiency. The order in which the patients were affected was the oldest first, the second after him and then the fourth, in whom the progress of the disease was so rapid that his death preceded that of the second brother, and finally the disease appeared in the third brother, who shows typical signs of lenticular disease but no symptoms of a diminished function of the parathyroids. While in the 3 older brothers the nervous symptoms were predominant, the symptoms in the youngest 1 were only those of a hepatic cirrhosis, although at necropsy alterations of the lenticular nuclei and their surroundings were present. This case differed from the others and from the typical clinical picture in that clinical symptoms due to hepatic damage are unknown in Wilson's disease. Nevertheless the family his-

tory and the observations at necropsy justify such a diagnosis. The symptoms in the 3 older brothers indicated a pathologic condition of the pyramidal tract, and in the second oldest brother microscopic investigation revealed a status spongiosus affecting the internal capsule; thus the pyramidal symptoms were explained. The anatomic changes in the central nervous system differed greatly and were not completely in accord with the clinical changes. The symptoms in the third brother developed in a fairly regular course, first the head, then the upper and finally the lower limbs. This might point to a body localization in the lenticular nucleus and its regular, gradual involvement.

Florida Medical Association Journal, Jacksonville

28:413-464 (March) 1942

Public Health Laboratory and the Private Practitioner. J. N. Patterson, Jacksonville.—p. 427.
Unrecognized Importance of Minor Injuries. L. J. Netto, West Palm Beach.—p. 431.
The Yesterday of Medicine. M. A. Nickle, Clearwater.—p. 433.

Journal of Allergy, St. Louis

13:215-326 (March) 1942

*Mold Fungi in Etiology of Respiratory Allergic Diseases: I. Survey of Air Borne Molds. Marie B. Morrow, E. P. Lowe, Austin, Texas, and H. E. Prince, Houston, Texas.—p. 215.
Comparative Atopic Activity of Alternaria Spores and Mycelium. H. N. Pratt, with assistance of Ruth Crossman, Boston.—p. 227.
*Air Borne Fungus Spores: Five Year Survey of Daily Mold Spore Content of Chicago Air. T. B. Bernstein and S. M. Feinberg, Chicago.—p. 231.
Influence of Acute Infection on Plasma Lipids and Course of Eczema. A. V. Stoesser, Minneapolis.—p. 248.
*Asthma and Primary Carcinoma of Bronchus. L. E. Prickman, C. K. Maytum and H. J. Moersch, Rochester, Minn.—p. 261.
Inhalant Sensitization in Guinea Pigs Under Controlled Atmospheric Conditions: I. Description of Air Conditioned Chamber and Fundamental Principles Underlying Its Use. L. J. Courtright, S. H. Hurwitz and Abbie Betts Courtright, San Francisco.—p. 271.
Proteins of Ragweed Pollen. R. R. Roth and T. Nelson, Chicago.—p. 283.
Evidence of Multiplicity of Allergens and Reagins in Cottonseed Sensitiveness. H. S. Bernton, J. R. Spies and H. Stevens, Washington, D. C.—p. 289.
Relationship Between Clinical Symptoms and Pollen Count in Pollinosis. S. S. Sack, Brooklyn, and H. G. Golan, Richmond Hill, N. Y.—p. 296.
Value of Continuing Preseasonal Therapy During Pollen Season. H. G. Golan, Richmond Hill, N. Y., and S. S. Sack, Brooklyn.—p. 300.
Skin Tests and Passive Transfer Studies in Neurologic Conditions. M. Zeller, Chicago.—p. 307.

Mold Fungi.—The results of a two year survey of the air borne molds in central and southwestern United States reported by Morrow and her associates emphasize the universal distribution of air disseminated molds, regardless of geographic location, season or climate. Molds were actually recovered at one of the northern stations immediately after a heavy snow and following several days of near zero weather. High mold counts were found not only at Houston, Galveston and Toledo, where coastal and lake conditions might be conducive to mold growth, but also at San Antonio, Abilene and Kansas City, Mo. Certain species, Aspergillus and Penicillium, although relatively low, occur so commonly and consistently as to be designated cosmopolites. Others, Alternaria and Hormodendrum, although recovered more frequently on the basis of yearly occurrence than any other genera, exhibit such a variation in incidence as to be reflected in the regional and seasonal trends of the totals. Still others, Pullularia, exhibit neither regional or seasonal trends nor consistency in occurrence but appear so suddenly that they definitely affect the totals for a single count. This is in contrast to the concept that Alternaria, Helminthosporium, Spondylocladium and Hormodendrum are encountered most commonly and consistently.

Air Borne Fungus Spores.—Bernstein and Feinberg state that a daily study of the mold content of the air in the Chicago area for a continuous period of five years revealed that Alternaria and Hormodendrum constituted 72 per cent of all the spores grown on artificial mediums. Some fungi show no particular seasonal tendency, but fungi that have a high incidence display decided seasonal fluctuations. The seasons for the various fungi vary, as does the length, time of onset and termination from year to year. Such definite variations usually are not observed for pollen seasons.

Asthma and Carcinoma of Bronchus.—The data on 3 patients who complained primarily of asthma but who also had an associated primary bronchial malignant growth are reported by Prickman and his co-workers, as they illustrate some of the features of concurrent asthma and primary bronchial carcinoma. The study emphasizes the importance of a careful and complete examination of all patients with asthma and the necessity for bronchoscopy. Recurring hemoptysis among asthmatic patients, although it may be associated with severe cough, should always suggest the possibility of a neoplasm or some other organic pulmonary disease. Recurring chills and fever or fever alone in asthma should suggest the possibility of bronchostenosis with retained secretions, and this condition may be caused by inflammation or by a neoplasm. Persistent impairment of breath sounds, with or without impairment of the percussion note, justifies bronchoscopy of any patient with asthma. Bronchoscopy is indicated when infiltrating lesions at the pulmonary hilus are demonstrated roentgenographically. The symptoms caused by carcinoma of the bronchus in some persons can be and are mistaken for those of asthma.

Journal of Clinical Investigation, New York

21:121-256 (March) 1942

Studies on Influence of Vitamin A and Vitamin C on Certain Immunologic Reactions in Man. A. E. Feller, L. B. Roberts, Elaine P. Ralli and T. Francis Jr., New York.—p. 121.
Influence of Diet on Ascorbic Acid Requirement of Premature Infants. Margaret Dann, New York.—p. 139.
Bleeding Time, Lymph Time and Clot Resistance in Men. A. L. Copley and J. J. Lalich, Kansas City, Kan.—p. 145.
Significance of Dextrose-Nitrogen Ratio and Its Bearing on Mechanism of Diabetes Mellitus. D. R. Drury, with technical assistance of H. Edelbrock and L. Mill, Los Angeles.—p. 153.
*Measurement and Metabolism of Thiamine and of Pyrimidine Stimulating Yeast Fermentation Found in Blood Cells and Urine of Normal Individuals. Alice T. Gorham, J. C. Abels, Annette L. Robins and C. P. Rhoads, New York.—p. 161.
*Measurement and Metabolism of Thiamine and of Pyrimidine Stimulating Yeast Fermentation Found in Blood Cells and Urine of Patients with Leukemia. J. C. Abels, Alice T. Gorham, L. Craver and C. P. Rhoads, New York.—p. 177.
Further Studies on Increased Susceptibility to Chloroform Poisoning Produced in Albino Rat by Injection of Crystalline Thyroxine. M. A. McIver and Eleanor A. Winter, Cooperstown, N. Y.—p. 191.
Effects of Large Intravenous Infusions on Body Fluid. J. D. Stewart and G. Margaret Rourke, Boston.—p. 197.
Intravenous Magnesium Sulfate in Treatment of Nephritic Convulsions in Adults. A. W. Winkler, P. K. Smith and H. E. Hoff, New Haven, Conn.—p. 207.
Serologic Typing of Hemolytic Streptococci of Lancefield Group A. L. A. Rantz, San Francisco.—p. 217.
Cardiac Output, Blood and Interstitial Fluid Volumes, Total Circulating Serum Protein and Kidney Function During Cardiac Failure and After Improvement. W. B. Seymour, W. H. Pritchard, L. P. Longley and J. M. Hayman Jr., Cleveland.—p. 229.
Effect of Foreign Surfaces on Blood Coagulation. E. L. Lozner and F. H. L. Taylor, with technical assistance of Harriet MacDonald, Boston.—p. 241.
Urinary Excretion of Thiamine as Index of Nutritional Level: Assessment of Value of Test Dose. H. L. Mason and R. D. Williams, Rochester, Minn.—p. 247.

Thiamine Metabolism.—In the belief that measurement of the circulating level of thiamine is preferable to that excreted in the urine, Gorham and her associates used the ultramicro technic of Atkin, Schultz and Frey to determine the thiamine in the leukocytes or erythrocytes. The method also makes it possible to measure the thiamine and the pyrimidine capable of accelerating yeast fermentation. The average thiamine level of the normal leukocytes (99.8 micrograms per hundred cubic centimeters) was about ten times that of the normal erythrocytes (10.3 micrograms per hundred cubic centimeters). The study would indicate that, in the course of its metabolism, thiamine is broken down to the pyrimidine accelerating yeast fermentation compound. The intravenous administration of thiamine to normal individuals is followed by a significant increase in the concentration of the pyrimidine accelerating yeast fermentation compound in the blood cells and urine. The mere presence of thiamine is not enough to account for the simultaneous production of pyrimidine accelerating yeast fermentation. Until the pyrimidine accelerating yeast fermentation normally found in blood and urine can be isolated and administered, no conclusion can be drawn as to its ability to produce thiamine in man.

Thiamine Metabolism in Leukemia.—A comparison of the level of thiamine and pyrimidine accelerator of yeast fermentation in the whole blood of normal subjects with that of patients with leukemia reveals to Abels and his associates that the total thiamine level in the leukocytes and platelets of patients with leukemia is about three times the normal average value and that in 82 per cent of the patients it is above the highest normal. The concentration of pyrimidine accelerating yeast fermentation in the leukemic leukocytes and platelets forms an abnormally small percentage of the total thiamine content. The total thiamine level in the erythrocytes of leukemic patients is about twice the normal average level, and in 35 per cent of the patients it is above the highest normal range. However, in the erythrocytes the level was normal. There was no obvious correlation between the concentration of thiamine in the blood cells and the form, sex or age of the patient and the severity or degree of the leukemia. Patients with leukemia excrete normal amounts of thiamine and pyrimidine accelerating yeast fermentation in the urine. The high concentration of thiamine in the leukocytes is thought to be due to an impaired utilization of the thiamine and not to an increased ingestion or faulty excretion of the vitamin. An elevated concentration of thiamine has also been found in the blood cells of patients with Hodgkin's disease and cancer of the gastrointestinal tract but not in patients with portal hepatic cirrhosis.

Journal Industrial Hygiene & Toxicology, Baltimore

24:59-92 (April) 1942

Rate of Solution of Particles of Quartz and Certain Silicates. P. H. Kitto and H. S. Patterson, Johannesburg, South Africa.—p. 59.
Commercial Talc: Animal and Mineralogic Studies. R. Z. Schulz and C. R. Williams, Boston.—p. 75.
Shattering of Particles by Impinger. L. Silverman and W. Franklin, Boston.—p. 80.
Influence of Vitamin B (Complex) Surplus on Capacity for Muscular and Mental Work. E. Simonson, N. Enzer, A. Baer and R. Braun, Milwaukee.—p. 83.
Compensation of Occupational Diseases: Additional Note. L. Teleky.—p. 91.

Journal of Lab. and Clinical Medicine, St. Louis

27:705-854 (March) 1942. **Partial Index**

Agglutination Reactions in Rheumatoid Arthritis. J. L. Ferry and L. W. Hunt, Chicago.—p. 705.
Intramuscular Administration of Sodium Sulfapyridine to Children. G. M. Jorgensen, R. W. Coffelt and J. C. Welch, Los Angeles.—p. 712.
*Sedimentation Rate in Gout. R. L. Haden and J. Kinell, Cleveland.—p. 725.
Role of Autoantibodies in Serodiagnosis of Syphilis. A. W. Ratcliffe, Chicago.—p. 729.
Vital Capacity Studies in the Aged. I. Miller, New York.—p. 737.
Pulmonary Aspergillosis. J. M. Donaldson Jr., C. J. Koerth and R. G. McCorkle, San Antonio, Texas.—p. 740.
Percutaneous Potency of Progesterone. R. R. Greene and S. C. Harris, Chicago.—p. 746.
Determination of Dosage-Mortality Ratio of Pentothal Sodium with Sulfanilamide. P. H. Lorhan, Gretchen Guernsey and A. E. Pugh, Kansas City, Kan.—p. 749.
*Relief of Muscular Weakness by Pyridoxine Hydrochloride. E. E. Rosenbaum, S. Portis and S. Soskin, Chicago.—p. 763.
Comparative Effects of Propylene Glycol and Some Other Agents on Oxygen Consumption of Organism. W. Van Winkle Jr., San Francisco.—p. 770.
Insulin Ferrihemochromogen. R. D. Barnard, Chicago.—p. 774.
Concentration of Sulfaguanidine (Sulfanilylguanidine) in Peripheral Blood of Human Beings After Its Introduction into Large Bowel and After Oral Administration. J. L. Keeley and W. M. McCord, New Orleans.—p. 785.
*Immediate Effect of Cigaret Smoking on Basal Metabolic Rates of University Men and Women. V. R. Goddard and J. G. Voss, Los Angeles.—p. 787.

Sedimentation Rate in Gout.—Haden and Kinell determined the sedimentation rate of 100 consecutive patients with gout; 21 had tophaceous gout and 79 the pretophaceous type. Compared with that of 50 apparently normal persons the rate in all stages of activity ranged from 0.22 to 2.3 mm. per minute; the average rate was 0.94 mm. Thus 87 per cent of the patients showed an increase in the rate above the upper limit of normal of 0.45 mm. per minute. The rate varied with the activity of the disease, it was lower in acute subsiding cases than in acute cases and it reached its lowest level in inactive cases and its highest level in the chronic progressive type of gout.

Relief of Muscular Weakness.—Rosenbaum and his co-workers relieved the muscular weakness of 1 patient with so-called neurasthenia, 3 with hyperthyroidism and 4 with ulcerative colitis by giving pyridoxine hydrochloride intravenously; 1 with myasthenia gravis and 3 patients with severe malnutrition obtained no relief. The failures might have been due to the absence of other vitamin factors essential to the action of pyridoxine hydrochloride.

Effect of Smoking on Basal Metabolism.—The immediate effect of cigaret smoking on the basal metabolic rate of 20 smokers was determined by Goddard and Voss, who observed that there was an appreciable deviation (rise) from a control rate prior to smoking. The rise after smoking was by no means a universal phenomenon. A rise in pulse rate, respiration rate and body temperature after smoking was generally observed. The sex of the subject did not influence the energy output after smoking. The explanation of the individual response to smoking is that the stimulation due to smoking occurs after different time intervals in different subjects.

Journal-Lancet, Minneapolis

62:75-110 (March) 1942

*Atypical Pneumonia Associated with Rheumatic Endocarditis. C. A. McKinlay, E. H. Lange and J. J. Boehrer, Minneapolis.—p. 75.
Advances in Medical Treatment of Glaucoma. K. C. Swan, Iowa City.—p. 79.
Congenital Atresia of Duodenum, with Coexisting Congenital Band Obstruction of Lower Bowel and Other Anomalies. G. I. W. Cottam and G. Cottam, Sioux Falls, S. D.—p. 83.
What the North Dakota Workmen's Compensation Bureau Expects of the Physician. W. H. Bodenstab, Bismarck, N. D.—p. 85.
Remarks on Treatment of Fractures. D. King, San Francisco.—p. 88.
Traumatic Affections of Knee Joint. E. Parnall, Minot, N. D.—p. 90.
Injuries of Ankle. J. C. Swanson, Fargo, N. D.—p. 93.
Sulfanilamide in Influenzal Meningitis: Report of Case with Rapid Recovery. M. Levine and C. G. Polan, Minneapolis.—p. 94.
College Health Program and National Defense Optimum Health for all Students. L. G. Rowntree, Washington, D. C.—p. 96.
Relation of Middle Turbinate to Paranasal Sinusitis. F. L. Bryant, Minneapolis.—p. 99.
New Wet Dressing. J. C. Fisher, New York.—p. 101.

Atypical Pneumonia and Rheumatic Endocarditis.—Two cases of atypical, presumably virus, pneumonia coincident with rheumatic endocarditis are reported by McKinlay and his associates. In 1 fatal case the pneumonopathy and the endocarditis were considered to be consistent with the rheumatic process. The clinical phenomena of the 2 cases suggested that the cause of the pulmonary and the endocardial lesion was a common agent.

Journal of Nutrition, Philadelphia

23:205-320 (March) 1942

Convulsive Syndrome in Young Rats Associated with Pyridoxine Deficiency. Esther Peterson Daniel, O. L. Kline and C. D. Tolle, Washington, D. C.—p. 205.
Antirachitic Properties of Dihydrotachysterol for Rat and Chicken. J. T. Correll and E. C. Wise, Kalamazoo, Mich.—p. 217.
*Iron Metabolism and Requirement of Young Women. Ruth M. Leverton and Alice G. Marsh, Lincoln, Neb.—p. 229.
Effect of Enzymatic Digestion on Pantothenic Acid Content of Meats Determined by Microbiologic Method. H. A. Waisman, L. M. Henderson, J. M. McIntire and C. A. Elvehjem, Madison, Wis.—p. 239.
Effect of Pectin on Retention of Dietary Lead (Radium D). H. K. Murer and L. A. Crandall Jr., Memphis, Tenn.—p. 249.
Vitamin Supplementation of U. S. Army Rations in Relation to Fatigue and Ability to Do Muscular Work. A. Keys and A. F. Henschel, Minneapolis.—p. 259.
Serum Phosphatase in Experimental Scurvy. H. Shwachman and B. S. Gould, Boston.—p. 271.
Quantitive Distribution of Phosphorus and Calcium in Certain Fruits and Vegetables. H. C. Sherman and M. S. Ragan, New York.—p. 283.
Effect on Growth and Calcium Assimilation of Citric Acid-Potassium Citrate Mixtures. Caroline Sherman Lanford, New York.—p. 293.
State of Vitamin A in Liver of Rat: II. Effect of Feeding Vitamin over Extended Periods. E. L. Gray and J. D. Cawley, Rochester, N. Y.—p. 301.
Rate of Increase of Blood Plasma Ascorbic Acid After Ingestion of Ascorbic Acid (Vitamin C). E. N. Todhunter, Tuscaloosa, Ala.; Ruth C. Robbins and Jennie A. McIntosh, Pullman, Wash.—p. 309.

Iron Metabolism and Requirement.—Leverton and Marsh made ninety-nine iron metabolism studies at intervals of one week on 69 women aged from 16 to 27 years consuming self-chosen diets. An average daily intake of 10.44 mg. of iron provided an average daily storage of 1.37 mg., which is ample

to replace normal menstrual losses. As the intake level rose from below 8 to 16 mg., negative balances decreased and the amount of iron stored increased. Seven subjects whose diets were generous in other nutrients had an average daily iron intake of 7.21 mg. and stored 1.55 mg. daily. Five other subjects with similar iron intakes but otherwise suboptimal diets had an average daily negative balance of 1.3 mg. It appears that emphasis should be placed on obtaining diets optimal in other essential nutrients, rather than iron alone, known to function in efficient iron absorption and utilization.

Journal of Pediatrics, St. Louis

20:281-404 (March) 1942

*Staphylococcic Pneumonia in Infants: Occurrence of Pneumopyothorax. H. H. Clemens and H. S. Weens, Atlanta, Ga.—p. 281.
*Outbreak of Tuberculosis in Infants Due to Hospital Infection. A. S. Pope, Boston.—p. 297.
*Pertussis Treated with Pertussis Antigen. J. G. Kramer, Akron, Ohio. —p. 301.
Studies of Amino Acid Administration: I. Utilization of Enzymatic Digest of Casein. A. F. Hartmann, C. S. Meeker, Anne M. Perley and Helen G. McGinnis, St. Louis.—p. 308.
Shigella Paradysenteriae Infection in Mice: Treatment with Sulfaguanidine and Sulfacetimide (Sulamyd). M. L. Cooper and Helen M. Keller, Cincinnati.—p. 325.
*Use of Sulfaguanidine in Enteric Infections. L. C. Hall, Paintsville, Ky.—p. 328.
Intrapulmonary Pressures in Newborn Infant. C. A. Smith, Boston, with technical assistance of T. C. Chisholm.—p. 338.
Sudden Death in Infants with Scurvy. R. H. Follis Jr., Baltimore. —p. 347.
Blood Volume and Exercise. D. E. Cassels and Minerva Morse, Chicago. —p. 352.
Infantile Acne Vulgaris. J. J. Slavens, Toronto, Canada.—p. 365.
Tularemia with Local Lesions Confined to Tonsils: Case Report. W. W. Waddell Jr. and M. Birdsong, University, Va.—p. 368.
*Mediterranean (Cooley's) Anemia in Youth of Nineteen Years Observed Since Early Childhood: Familial Aspects and Hematologic Features of "Carrier" or Asymptomatic Case. C. H. Smith, New York.—p. 370.
Blood Pressure Observation on Children in Private Practice. C. G. Kerley and E. J. Lorenze, New York.—p. 383.

Staphylococcic Pneumonia in Infants.—Pneumopyothorax occurred in 4 of 6 infants with staphylococcic pneumonia that Clemens and Weens encountered in sixteen months. The pneumonia was bronchiogenic in type and usually followed an infection of the upper respiratory system, including the nasal accessory sinuses and the middle ear. The pneumopyothorax occurred before any diagnostic or therapeutic thoracentesis was performed. Early empyema occurred in all the infants. Frequent roentgen examination, especially in the erect position, is the most valuable aid in the early diagnosis of the complications. The clinical course is characterized by sudden onset with high fever, rapid respiration and cough. From the onset and through the entire course of the illness (to death) the patients appeared toxic. Stupor and unconsciousness were observed in the terminal stages. A drop in temperature was not always followed by an improved clinical condition. A sudden turn for the worse, indicated by cyanosis, hyperpyrexia, an increase in cardiac and respiratory rates and the vomiting of dark brown material, should suggest pneumopyothorax. Staphylococci in large numbers were found in the empyema fluid from the 6 infants. Pulmonary abscess was found in the 3 patients on whom necropsy was permitted. The centers of the abscesses contained necrotic material and frequently dense masses of staphylococci. The remainder of the pulmonary parenchyma showed a tendency to localized suppuration. Complete pneumothorax was prevented by the formation of adhesions between the parietal and visceral pleura. Therapy (chemotherapy, staphylococcus antitoxin, surgical procedures, blood transfusion and fluid balance by intravenous and subcutaneous administration of dextrose) might have been more favorable had it been instituted earlier, that is before adhesions which facilitated the retention of pus had formed. The cause of death seemed to be the overwhelming toxemia and the change of the intrathoracic pressure in the patients in whom pneumothorax developed.

Outbreak of Tuberculosis Due to Hospital Infection.—A recent hospital outbreak of miliary tuberculosis among infants resulted from their being exposed to a nurse with open tuberculosis. The nurse had been employed at the hospital from March 15, 1939 to Jan. 30, 1940; her duties included all care of infants in the nursery from 11 p. m. to 7 a. m. A total of 506 infants were born at the hospital during her employment there, and of the 426 that were tested later 26 reacted to the Mantoux test. This gives a reaction rate of 6.1 per cent, which is three times the rate found among children (with a mean age of 2½ years) tested in Massachusetts Well Baby Clinics. Of the 26 infants who reacted to the tuberculin test, 7 presented roentgen evidence of tuberculosis. Two died of miliary tuberculosis and the diagnosis was confirmed at necropsy, and 2 other reactors were subsequently admitted to the Children's Hospital, Boston, 1 with a diagnosis of pulmonary tuberculosis and 1 with a diagnosis of tuberculous tracheobronchial nodes with atelectasis. Both recovered. The remaining 3 infants showed enlargement of the tracheobronchial lymph nodes, which is characteristic of tuberculosis, but symptoms of the disease have not developed. Active tuberculosis was not found in any member of the families of the 7 infants. Lack of interest on the part of parents has made it impossible to secure many retests, and only 10 of the reacting children were brought in for roentgen study a year later, March 1941. At that time none showed any evidence of pulmonary disease. Two facts are emphasized by Pope: babies can be infected with tuberculosis during the earliest days of life, and such infection in certain cases tends to progress rapidly and often ends fatally. The diagnosis of tuberculous meningitis or of generalized tuberculosis in an infant or child should initiate an immediate and intensive search for the source of infection.

Pertussis Treated with Pertussis Antigen.—Pertussis broke out among 36 children from 3 to 9 years of age occupying one department of a home. The 36 children were divided into three groups: 14 received detoxified pertussis antigen, 11 were not treated and 11 had had the disease before. The study reported by Kramer lasted seven weeks. There was no reduction in the number of paroxysms of coughing immediately after the injection of the antigen, nor was the severity or the length of the disease influenced. The course of the disease in the control group was approximately the same as in the treated group. Some benefit might be claimed for 7 patients who received five injections of pertussis antigen at the beginning of the disease; the course of the disease in them was five and a half weeks as compared to seven weeks in the 7 patients who did not receive treatment until the twelfth day of the disease. However, 4 control children had a similar abbreviated course. The children who previously had pertussis did not contract the disease even in a mild form. Tabulation of the time at which the paroxysms occurred shows that two thirds of the coughing spells occurred between 7 p. m. and 7 a. m. and that the maximal intensity of coughing in pertussis occurred during the early hours of the night.

Sulfaguanidine for Enteric Infections.—Of 30 patients moderately to severely ill with acute bacillary dysentery, Hall treated 15 with sulfaguanidine and used 15 as controls. The results in 13 of the treated patients were excellent, fair in 1 and failure (death on the ninth day) in 1. The response was just as dramatic and spectacular as that obtained with sulfathiazole and sulfapyridine in pneumococcic pneumonia. The temperature usually dropped to normal in twenty-four hours, and the general appearance of the patient changed from that of an acutely ill child to one who hardly looked ill in forty-eight hours. When treatment was instituted early a definite decrease in toxicity and a slowing down of the stools usually occurred in as short a time as twelve hours. In all but 3 patients the temperature returned to normal in twenty-four hours. Generally the course of the disease in the control patients was that observed in the past with two exceptions: 1 patient died from an overwhelming toxemia sixty hours after the onset of illness and 1 patient made a rapid recovery after an onset which would ordinarily indicate a virulent infection. The course of the illness of 5 patients with typhoid treated with sulfaguanidine was essentially unchanged by the drug, as was a Salmonella gastroenteritis in 1 patient. Few toxic effects were observed among the 21 treated patients. Nausea was observed twice, headache once and conjunctivitis once. Sulfaguanidine was not given for longer than twelve days to any patient.

Mediterranean Anemia.—Smith reports a case of Mediterranean or Cooley's anemia in a youth of 19 who has been observed since he was 4. The case illustrates the form of the

disease in which adult life is reached. The familial potentiality of the disease is emphasized by the fact that every member of the family had some abnormality of the erythrocytes.

Journal of Pharmacology & Exper. Therap., Baltimore

74:239-334 (March) 1942. **Partial Index**

Solubility Studies and Oral Administration of Sodium Sulfapyridine. S. S. Sobin, Chicago.—p. 247.
Assay of Anti-Pernicious Anemia Liver Concentrates by Use of Isolated Bone Marrow Preparation. N. Pace and R. S. Fisher, Richmond, Va. —p. 256.
Pharmacologic Behavior of Intraocular Muscles: IV. Action of Strychnine on Dilator and Sphincter Iridis. E. Sachs, Detroit.—p. 262.
Observations on Chronic Toxicities of Propylene Glycol, Ethylene Glycol, Diethylene Glycol, Ethylene Glycol Mono-Ethyl-Ether and Diethylene Glycol Mono-Ethyl-Ether. H. J. Morris, A. A. Nelson and H. O. Calvery, Washington, D. C.—p. 266.
*Influence of Diet on Sulfanilamide Toxicity. I. Kapnick, C. Lyons and J. D. Stewart, Boston.—p. 284.
Effect of Sympathomimetic Amines on Pancreatic Secretion. H. Greengard, R. A. Roback and A. C. Ivy, Chicago.—p. 309.
Quantitative Nature of Coaction of Bismuth and Arsenical Compounds in Therapy of Experimental Syphilis. N. M. Clausen, B. J. Longley and A. L. Tatum, Madison, Wis.—p. 324.

Diet and Sulfanilamide Toxicity.—A high protein (casein) diet given to rats was observed by Kapnick and his co-workers to protect the animals against large amounts of sulfanilamide administered daily in acacia suspension. The survival, weight gain, condition of coat, physical activity and clinical appearance were better. Drug intolerance was increasingly apparent on the general high fat and high carbohydrate diet. On a high protein diet the volume of urine increased, more of the drug was eliminated and the concentration of the drug in the blood was lower. The greater tolerance afforded by the high protein diet was probably due to some extent to its more rapid excretion.

Kentucky Medical Journal, Bowling Green

40:75-116 (March) 1942

Jefferson County Medical Society. M. J. Henry, Louisville.—p. 78.
Urology in Infancy and Childhood. J. A. Bowen and J. R. Stites, Louisville.—p. 80.
Our Dental Problems. A. P. Williams, Louisville.—p. 85.
Treatment of Traumatic Injuries of Face. E. C. Hume, Louisville. —p. 89.
Clinical Use of Stilbestrol. J. B. Marshall, Louisville.—p. 93.
Pneumonia and Sulfonamide Therapy. L. T. Minish Jr., Louisville. —p. 97.
Everyday Surgery. M. Casper, Louisville.—p. 100.
Use of Various Members of Vitamin B Complex. J. E. Edwards, Lancaster.—p. 104.
Heart Disease: General Practitioner's Viewpoint. T. A. Griffith, Mount Vernon.—p. 107.

Ohio State Medical Journal, Columbus

38:201-304 (March) 1942

Psychoses as a Problem for the Practitioner: Interpretative Review in Nontechnical Language. J. L. Fetterman, Cleveland.—p. 217.
Poisoning Due to Methyl Salicylate (Oil of Wintergreen): Report of Case with Autopsy. I. S. Epstein and J. L. Work, Cleveland.— p. 225.
Stilbestrol: Use in Female Surgical Castrates. K. C. Sharretts, Fort Benning, Ga.—p. 227.
Afebrile Rheumatic Fever: Report of Case. L. N. Jentgen, Columbus. —p. 230.
Sulfathiazole and Sulfapyridine in Treatment of Pneumococcic Pneumonia. C. F. Garvin, Cleveland.—p. 231.
*Diagnosis of Monocytic Leukemia from Examination of Peripheral Blood Stained with Wright's: Report of Five Cases. E. H. Sterne Jr., Cincinnati.—p. 234.
Cyclopropane Anesthesia. R. M. Crane and R. J. Whitacre, East Cleveland.—p. 239.
Primary Carcinoma of Lacrimal Punctum. C. J. Streicher, Canton. —p. 240.
Survey of Maternal Mortality at Mercy Hospital, Hamilton, Ohio, 1924 to 1939. A. Lichtyger, Hamilton.—p. 241.
Periarteritis Nodosa: Case Record Presenting Clinical Problems. H. Z. Lund, Cleveland.—p. 244.

Monocytic Leukemia.—Sterne stresses the fact that monocytic leukemia can be definitely diagnosed only by demonstrating the pathologic monocytes in the peripheral blood stained with Wright's solution. The stain will also differentiate this leukemia from the myeloid and lymphatic leukemias. In his 5 patients the young myeloid cells varied between 2 to 15 per cent. Ordinarily the percentage of monocytes, both mature and immature, is high enough (more than 60 per cent in twelve of seventeen determinations) to avoid confusion as to whether the monocyte or the myelocyte is the leukemic strain of cell. In the five determinations showing a lower percentage more than half of the monocytes were young forms, and the myeloid elements never exceeded 10 per cent, leaving little doubt as to which was the leukemic strain. In those few cases in which immature myeloid and monocytic elements are present in equal numbers the leukemic series is the one which will show amitotic nuclear division, unequal divisions of nucleoli and incomplete mitotic spindles with resulting nuclei of unequal size. Certain cases of monocytic leukemia show a high percentage of clasmatocytes. Dameshek believes this cell to be the forerunner of the monocyte. If a trained hematologist and pathologist are available additional valuable diagnostic evidence may be obtained from supravital staining, lymph node biopsy and bone marrow aspiration. Supravital staining differentiates monocytes and their precursors from other cell types; biopsy of the lymph nodes and bone marrow aspiration distinguish monocytic leukemia from other diseases producing reticuloendothelial hyperplasia. A simple classification of the relative age of monocytes that will suffice in most instances is similar to that used for the myeloid series: the youngest recognizable cell is called a monoblast (corresponding to the myeloblast), a slightly older form a promonocyte (promyelocyte), a still older cell a young monocyte (myelocyte) and finally the adult monocyte (mature neutrophil). The last three, and frequently the first type, may be satisfactorily identified by means of a Wright's stain of the peripheral blood.

Oklahoma State Medical Assn. Jour., Oklahoma City

35:93-138 (March) 1942

Practical Refraction. J. P. Luton, Oklahoma City.—p. 93.
Pernicious Anemia. W. Langston, Oklahoma City.—p. 96.
Present Status of Vitamins in Neurology and Psychiatry. J. A. Willie, Oklahoma City.—p. 100.
*Tularemia: Report of Ten Cases. E. H. Werling, Pryor.—p. 103.
*Diagnosis and Control of Brucellosis. I. F. Huddleson, Lansing, Mich. —p. 106.

Tularemia.—Werling discusses 10 cases of tularemia (9 of the ulceroglandular and 1 of the typhoid type) observed between June 1937 and November 1940. All the patients recovered. The infection of 1 followed tick bite, 8 handled wild rabbits, and no definite source could be determined for 1. Six of the patients received 0.6 Gm. of neoarsphenamine at weekly intervals with good results in 5 after an average of five doses, 2 received sulfanilamide without any apparent benefit and 2 received serum, which still seems to be the best method of treatment. For the greatest benefit, serum and neoarsphenamine must be administered early.

Diagnosis and Control of Brucellosis.—During an epidemic of melitensis brucellosis Huddleson had an opportunity for making a comparative study of four diagnostic tests in 41 clinical and 49 subclinical cases of the disease: the blood cultures, the skin, the agglutination and the phagocytosis tests. Of the 4 clinical cases with blood serums negative to the agglutination test 3 showed a positive blood culture on the same date. The blood culture was positive in 12 other clinical cases which at the time showed a maximal agglutination titer of 1:25. The interval between the date of onset and the date the agglutination test was made and titer obtained varied from one to eighty days. There does not appear to be any relationship between the strength of the titer and the time the test was made after onset. The brucellergen skin test was positive in all clinical cases. The phagocytosis test was confusing in 8 of the 41 clinical cases in that the phagocytic picture was similar to that observed in immune individuals. On the basis of the results of each of the laboratory tests, too much reliance should not be placed on any one test to confirm the early diagnosis of clinical brucellosis. The results of all the available tests must be carefully analyzed before a positive diagnosis is arrived at. In considering the results on the group classified as subclinical cases it is shown conclusively that it is possible to demonstrate active infection long after exposure to infective material in individuals in whom clinical manifestations of brucellosis never developed. Since brucellosis is primarily an animal borne disease, its incidence in man can be reduced only either by suppressing the disease in animals or by effectively breaking the infectious chains between animals and man. The three effective control measures in animal brucellosis are slaughter of infected animals,

segregation of infected animals from the noninfected on separate farms and immunization of calves under 8 months of age. Control of the disease in cattle by vaccinating the calf is worthy of trial. Another simple and inexpensive control measure in animals would be the requirement of a negative blood test on animals sold for breeding or for dairy purposes. The incidence of the disease in man could be reduced quickly if the owners of livestock used more caution in the handling of infected animals, their excreta and secretions and by the proper pasteurization of all milk from infected animals used for human consumption.

Pennsylvania Medical Journal, Harrisburg

45:545-672 (March) 1942

Surgical Problems in the Diabetic. L. S. McKittrick, Boston.—p. 559.
*Acute and Chronic Perforations of Gallbladder. R. L. Schaeffer, Allentown.—p. 566.
Role of Adrenals in Health and Disease. J. M. Rogoff, Pittsburgh.—p. 570.
Evaluation of Metranoikter in Treatment of Dysmenorrhea. S. L. Israel, Philadelphia.—p. 575.
Differential Diagnosis of Angina Pectoris, with Special Reference to Esophageal Spasm and Coronary Occlusion. C. C. Wolferth and J. Edeiken, Philadelphia.—p. 579.
Use of Digitalis. A. B. Fuller, Pittsburgh.—p. 585.
*Painless Myocardial Infarction. W. D. Stroud and J. A. Wagner, Philadelphia.—p. 590.
Note on Tonsil Question. C. W. Ashley, Bloomsburg.—p. 594.
Pulmonary Suppuration Complicating Diabetes Mellitus. H. R. Decker, Pittsburgh.—p. 596.
Preliminary Report on Adjuvant Treatment of Toxic States. E. A. Strecker and T. D. Rivers, Philadelphia.—p. 601.
Effect of Vitamin A in Pityriasis Rubra Pilaris and Keratosis Follicularis. M. F. Pettler, Beaver Falls.—p. 604.

Acute and Chronic Perforations of Gallbladder.—Schaeffer does not believe that there are silent and harmless gallstones. When gallstones are discovered they should be removed, preferably by cholecystectomy. He operated on 601 patients with disease of the gallbladder from 1934 to 1941, among them 20 whose gallbladders were perforated. These 20 were found among the 122 acute cases. Eight of the 20 patients died; there were 6 with chronic perforations, 2 of whom died. Eighteen of the 20 patients were women; the youngest was 30 and the oldest was 77. The average age of those who died was 68 and of those who recovered 54.4 years. The patients complained of symptoms before admission to the hospital from two weeks to thirty-five years. When gallstones are revealed roentgenographically or there is a definite history of disease of the gallbladder the patient should not only be advised to have them removed surgically but should be urged and persuaded to be operated on before the condition of the gallbladder becomes acute and is followed by perforation and peritonitis. Only 3 of the 20 patients with perforations complained of symptoms for less than one year. All but 3 of the patients with acute perforations were operated on within twenty-four hours after admission to the hospital, those with a chronic condition within one to eighteen days. The acute perforation is an abdominal emergency requiring immediate operation. The author's attitude in acute cholecystitis is that the operation should be done in the acute stage rather than to wait until gangrene and perforation occur. Perforation produces an immediate severe chemical and toxic peritonitis. The operative procedure must be determined by the patient's clinical condition.

Painless Myocardial Infarction.—Stroud and Wagner report 2 cases of painless myocardial infarction. They have observed a small group of persons who have been subjected to paravertebral injection of 1 per cent ammonium chloride for the relief of the pain of angina pectoris. Clark has shown that afferent impulses which are interpreted as pain and warmth are conducted, at least in part, by C fibers. These fibers may be eliminated if the nerve is injected with 1 per cent ammonium chloride. Subsequent to the injection these patients apparently no longer suffered pain on effort. The sensation of substernal fulness, tightness or oppression together with dyspnea still continued to limit their activity, although to a less extent than prior to the injections. The effect did not persist for more than four days. Ultimately alcohol was used. It gave more permanent relief but was occasionally complicated by neuritis. These symptoms have been termed "the pain equivalent of angina pectoris." It seems possible that some patients may have an abnormality of the C fibers in the sympathetic chain which prevents the usual stimulation by the changes brought about by acute myocardial anoxia, or possibly the fibers have been destroyed by a chronic process so that they no longer respond to even severe changes. In myocardial infarction without pain all the objective signs of infarction are present, i. e. a fall in blood pressure, fever, leukocytosis and electrocardiographic changes. The sudden onset of dyspnea, congestive heart failure or an unusual attack of syncope in a known hypertensive patient deserves the same careful study and treatment as if the patient had experienced substernal pain radiating to the neck, the arms and the wrists.

Quarterly J. Studies on Alcohol, New Haven, Conn.

2:641-868 (March) 1942

Alterations in Respiration Caused by Alcohol. F. A. Hitchcock, Columbus, Ohio.—p. 641.
Absenteeism in Industrial Plant Due to Alcoholism. Rachel Waples Stevenson, Chicago.—p. 661.
*Occurrence of Polyneuritis and Abnormal Pupillary Reactions in Chronic Alcoholism. L. Secunda and E. H. Trowbridge Jr., Boston.—p. 669.
Alcohol Problem: Possible Lines of Useful Research. A. J. Carlson, Chicago.—p. 672.
Inebriety: Classification. I. A. Darling, Torrance, Pa.—p. 677.
Alcoholism and Crime. R. S. Banay, Ossining, N. Y.—p. 686.
Treatment of Alcohol Addiction: Review of Literature. W. L. Voegtlin and F. Lemere, Seattle.—p. 717.

Polyneuritis and Abnormal Pupillary Reactions.—Polyneuritis and pupillary anomalies (sluggish or absent reaction to light, inequality in size and shape) were observed by Secunda and Trowbridge to occur more frequently in patients with alcoholic psychosis with definite mental confusion or impairment of the sensorium than in patients with alcoholic psychosis with little intellectual involvement.

Radiology, Syracuse, N. Y.

38:261-382 (March) 1942

*Some Practical Considerations Regarding Employment of Various Qualities of Roentgen Rays in Therapy. Edith H. Quimby, New York.—p. 261.
*Action of Roentgen Rays on Inflammatory Conditions. A. U. Desjardins, Rochester, Minn.—p. 274.
*Value of Roentgen Therapy in Pneumonia Which Fails to Respond to the Sulfonamides. J. P. Rousseau, W. M. Johnson and G. T. Harrell, Winston-Salem, N. C.—p. 281.
Roentgen Therapy for Acute Sinusitis. W. C. Popp and H. L. Williams, Rochester, Minn.—p. 290.
*Further Observations on Radium Treatment of Postoperative Parotitis. R. E. Fricke and G. F. Madding, Rochester, Minn.—p. 294.
*Roentgen Treatment of Acute Peritonitis. J. F. Kelly and D. A. Dowell, Omaha.—p. 299.
*Acute Postoperative Parotitis. E. P. Pendergrass and P. J. Hodes, Philadelphia.—p. 307.
Spontaneous Pneumomediastinum (Mediastinal Emphysema): Report of Two Cases in Infants. A. B. Smith, Kansas City, Mo., and J. F. Bowser, Kansas City, Kan.—p. 314.
Roentgen Manifestations of Bejel ("Endemic Syphilis") as Observed in Euphrates River Valley. G. S. Rost, Deir-ez-Zor, Syria.—p. 320.
Congenital Atresia of Esophagus. M. Fuhrman, D. Dragutsky, G. Rook and L. Grossman, New York.—p. 326.
Naegele Pelvis: Study of Case in Labor. R. Torpin, Augusta, Ga.—p. 330.
Effect of Roentgen Rays on Peripheral Nerve of Rat. A. H. Janzen and S. Warren, Boston.—p. 333.
Electric Model of X-Ray Machine. M. M. D. Williams, Rochester, Minn.—p. 338.
Portable Geiger-Müller Counter. R. B. Taft, Charleston, S. C.—p. 350.
Rapid Dark Adaptation Test. R. A. Harvey, Rochester, N. Y.—p. 353.

Various Qualities of Roentgen Rays in Therapy.—Six sets of voltage-filter-distance factors for x-ray beams are presented by Quimby. They cover the range between 100 kilovolts of unfiltered to 200 kilovolts of highly filtered radiation. Depth dose data for these beams, 100, 100, 120, 140, 200 and 200 kilovolts with respectively no filter, 1 mm. of aluminum, 3 mm. of aluminum, 0.25 mm. of copper, 0.5 mm. of copper and 2 mm. of copper, half value layer of 0.9 mm. of aluminum, 1.9 mm. of aluminum, 4.3 mm. of aluminum, 8.6 mm. of aluminum, 0.9 mm. of copper and 1.8 mm. of copper and a focal skin distance of 15, 20, 30, 40, 50 and 80 cm. are presented in such a manner as to facilitate determinations as to their relative values in any specific condition. The approximate number of roentgens delivered per minute for the six sets of roentgen qualities are 400, 150, 40, 15, 45 and 8. The values are based on averages of calibrations made on low voltage machines operating at 4 to 5 milliamperes and on high voltage machines

operating at 20 to 25 milliamperes. In selecting the quality of radiation to be employed for any particular lesion the roentgenologist must take into account not only the dose at that definite depth but also the doses to overlying and underlying structures.

Roentgen Rays for Inflammatory Conditions. — In describing the action of roentgen rays on inflammatory conditions, Desjardins points out that each variety of cell in the body has a specific sensitiveness to roentgen rays; the leukocytes are the most sensitive. Not only do roentgen rays have a decidedly deleterious action on the important varieties of leukocytes but the action is surprisingly rapid. When the effect of irradiation on an inflammatory lesion is closely observed, the rate and manner of the response of the cells is often so similar to that under experimental conditions that a relationship between the two is almost inescapable. When exposed to roentgen rays it is probable that a proportion of the leukocytes are destroyed, the cells disintegrate effectively and their contents, including the bacteriolytic substances which they contain, are destroyed and scattered between the remaining intact cells and tissue fluid of the inflamed area. As the disintegration proceeds it is accompanied or followed by an increase in phagocytosis. Some of the reticular cells most probably assume a phagocytic property. Chronic inflammations respond best to repeated doses somewhat larger than the single ones required for acute inflammations. The greater the degree of leukocytic infiltration (as in acute infection) the more definite and the more rapid is the effect of treatment. Leukocytic infiltration and connective tissue proliferation (as in chronic inflammation) act in opposite directions; the former increases the effect of irradiation and the latter diminishes this effect.

Roentgen Therapy for Pneumonia.—Rousseau and his associates limit their discussion to the analysis of 104 cases of acute lobar pneumonia since 1937 with roentgen therapy and the usual supportive and symptomatic measures and of 29 in which irradiation was used only after sulfonamide therapy for not less than three or more than seven days and the usual routine medical care proved valueless, and death seemed inevitable. Of the 104 patients 98 recovered and 6 died. The average duration of illness before irradiation was instituted was two days. Of the 29 patients 22 recovered and 7 died. The average duration of these patients' illness before roentgen therapy was begun was five and eight-tenths days. The authors conclude that although the effectiveness and simplicity of sulfonamide therapy for pneumonia entitle it to first place, roentgen treatment appears in some cases to have distinct advantages, especially for persons who are known to tolerate the sulfonamides badly, the very old, the debilitated and those with serious cardiac, renal or hepatic disease, whose recovery may be curtailed by the toxic effects of the drug. No ill effects from irradiation could be detected in persons already saturated with the sulfonamide drugs. The interval between the roentgen treatment and death of all the patients who died was less than fifteen hours. All the patients who survived for as long as fifteen hours after roentgen treatment was begun recovered completely. This suggests that the treatment may not exert its maximal effect on the course of the disease for fifteen to twenty-four hours. Usually changes in the temperature, pulse, respiration and leukocyte count were not demonstrable until fifteen to thirty-six hours after roentgen treatment.

Radium for Postoperative Parotitis.—Fricke and Madding believe that the reports in the literature on the serious potentialities of acute postoperative parotitis have been unduly pessimistic. When death does occur the primary disease for which the operation was performed is usually responsible and the parotitis is only a contributing factor. This was true of their 190 patients treated with radium and of 79 treated by other methods. Approximately 11 per cent of the patients treated with radium later died, as did 7 per cent of those not irradiated. Seven experienced spontaneous rupture and drainage, but all these recovered. In 8 per cent of those in whom radium was employed and in 19 per cent of those treated by other methods the extent of the infection increased, fluctuation appeared and surgical drainage became necessary. According to most investigators, when incision and drainage are required the prognosis is much more serious. A detailed study of the 19 patients who died revealed that parotitis was the chief cause of death of only 1. The average age of the patients who died was ten years more than the average age of the entire group. The preceding operation in 9 of the 19 patients who died had been performed for a malignant tumor, usually of the colon. The principal cause of death was peritonitis, with bronchopneumonia second, followed by uremia and pulmonary embolism. The parotitis of 5 patients had either cleared up entirely or was subsiding at the time of death.

Roentgen Treatment of Acute Peritonitis.—The opinion of Kelly and Dowell is that if gas gangrene and acute spreading peritonitis of intestinal origin are caused by the same organism their excellent results with roentgen therapy in the few cases that they so treated are explained. Regardless of the question of bacterial etiology, they are convinced that the results of irradiation in acute peritonitis will parallel those secured in gas gangrene and that the mortality rate following appendicitis will be decidedly reduced. Of all the cases of acute peritonitis treated in the various stages by different methods that are listed in the record room of St. Joseph's Creighton Memorial Hospital the best results were obtained with irradiation. Of 109 treated by general measures 71 died, of 42 treated with sulfanilamide and general measures 16 died, of 21 given sulfanilamide, irradiation and general measures 7 died and of 30 treated by roentgen radiation and general measures 6 died. Conditions which preclude success from the roentgen treatment of peritonitis are its delayed use, organic intestinal obstruction, open and leaking intestinal perforation, the early internal use of the sulfonamides simultaneously with roentgen therapy and underlying organic pathologic changes which are fatal in themselves.

Acute Postoperative Parotitis.—A method for treating acute postoperative parotitis by irradiation is outlined by Pendergrass and Hodes. Treatment is instituted as soon as the diagnosis is made. Relief of obstruction of Stenson's duct should be attempted by aspirating, probing, gentle irrigation or/and strong suction, but free drainage from the parotid should be established. Only then is the parotid irradiated with roentgen rays generated at 130 kilovolts, filtered through 0.25 mm. of copper and 1 mm. of aluminum. The skin target distance is 25 to 30 cm. and the port is large enough to extend beyond the inflamed area. If the patient is too sick to be brought to the x-ray department for treatment, the portable x-ray machine is used at his bedside. On the first and on the second day a dose of 150 roentgens is delivered to the skin overlying the infected gland, 100 roentgens the third day, none on the fourth day and occasionally 75 to 100 roentgens on the fifth day. From the time the patient is first seen, every effort is made to promote emptying of the parotid, his fluid balance is watched carefully, he chews gum constantly and sucks on hard sour candy, and hot mouth washes are employed every hour. Massaging the gland is an extremely important though somewhat hazardous procedure, as the pressure exerted must be gentle. The gland should always be "milked" in the direction of the normal flow of its secretions. Of 47 patients with acute postoperative parotitis given roentgen therapy, 19 responded within four days, the improvement of 13 was somewhat less dramatic and 15 obtained little or no effect from the treatment; in 7 incision and drainage of the gland were resorted to. Death from parotitis alone is rare; usually it should be attributed to the primary disease.

South Carolina Medical Journal, Florence

38:57-80 (March) 1942

Fractures of Wrist. F. A. Hoshall, Charleston.—p. 57.
Surgical Treatment of Varicose Veins. C. J. Scurry, Greenwood.—p. 60.
Diethylstilbestrol Suppository Medication in Dysmenorrhea. R. B. Greenblatt, Augusta, Ga.—p. 62.

Tennessee State Medical Assn. Journal, Nashville

35:83-122 (March) 1942

Precancerous Dermatoses. H. King, C. M. Hamilton and R. Buchanan, Nashville.—p. 87.
Functional Uterine Bleeding. J. R. Simms Jr., Oxford, Miss.—p. 92.
Tennessee Law to Prevent Spread of Venereal Diseases Through Marriage. C. B. Tucker and W. C. Williams, Nashville.—p. 97.
Neurosyphilis and Reports of Cases Treated with Malarial Therapy. W. D. Martin, Bolivar.—p. 101.
Female Urethra. G. M. Roberts and G. Roberts, Chattanooga.—p. 105.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

29:285-364 (Jan.) 1942

"Slide" Operation for Inguinal and Femoral Hernia. N. C. Tanner.—p. 285.
Arteriovenous (Cirsoid) Aneurysm of Scalp Successfully Treated by Combined Arterial Ligation and Venous Injection: Case. D. H. Patey.—p. 290.
Ureterocele, with Prolapse Through External Urinary Meatus. I. Macpherson.—p. 294.
Traumatic Cerebrospinal Rhinorrhea: Repair of Fistula by Transfrontal Intradural Operation. K. Eden.—p. 299.
*Skeletal and Other Changes Found in Case of Suprasellar Cyst of Rathke's Pouch. R. A. Rowlands and S. L. Simpson, with pathologic report by Dorothy S. Russell and H. M. Turnbull.—p. 304.
Lymphadenoid Goiter Associated with Full Clinical Picture of Graves' Disease: Case. K. C. Eden and W. R. Trotter.—p. 320.
Monteggia Fractures. A. Naylor.—p. 323.
Tissue Infiltration by Cholesterol as Result of Trauma. A. E. M. Woolf.—p. 327.
Varix of Spinal Cord: Case Report with Diagnostic Radiologic Appearance and Description of Tumor. G. A. Ransome and E. C. Mekie.—p. 330.
Spontaneous Disappearance of Phosphatic Deposits from Urinary Tract. R. M. Walker and J. W. Thompson.—p. 336.
*Examination of Night Visual Capacity in Relation to Flying. P. C. Livingston.—p. 339.
Treatment of Acute Appendicitis. H. H. Rayner.—p. 346.

Suprasellar Cyst of Rathke's Pouch.—Rowlands and his collaborators report a case of tumor of the hypophysial duct in a man of 43, with a symptomatology comparable to or in large measure identical with that occurring in Simmonds' cachexia and in complete experimental hypophysectomy. Infantilism, inhibited growth, retardation of age changes in chondral cartilage, arrest of sexual development, diabetes insipidus, disturbance of carbohydrate and fat metabolism and of heat regulation, a subnormal basal metabolism, symptomatic narcolepsy and mental changes were present. At necropsy the pituitary stalk was found destroyed, the posterior pituitary lobe almost completely destroyed, two thirds of the anterior lobe was replaced by clefts of cholesterol crystals surrounded by collagen and numerous foreign body giant cells, and the degeneration of the remnant of the anterior lobe was advanced. It is probable that the whole of the pituitary gland was functionless, and if this was so it would explain the greater part of the symptomatology. Study of the skull disclosed a large epidermoid cyst in the region of the septum pellucidum and left frontal lobe.

Night Visual Capacity and Flying.—Livingston does not believe that vision in the night sky corresponds to the state of dark adaptation used in laboratory studies and therefore suggests that the term night visual capacity and not dark adaptation be used. The range at which aircraft become detectable is influenced by the position of the observer in relation to the highest background brightness. The use of oxygen for night flying is of greatest importance; withholding it impairs night vision at relatively low altitudes. The two methods for preparing the eyes of pilots before taking off are retention in a dark room or the wearing of dark goggles of low light transmission. The goggles overcome the risk of the transfer of upper respiratory ailments and the disinclination of active men to be inactive for a period before flying. From a study of recent work it became clear that the real problem was to suit the ophthalmic technic to the visual reactions under flying conditions. The requirements of the Royal Air Force were met by creating an apparatus which required a preliminary introductory preparation that caused no abnormal sensations. The instrument is a rotating hexagon of six metal sides 24 inches high with four rectangular apertures in each face. Behind each panel is a white flashed opal screen, visible only in the apertures. The screens can be moved up or down, so that the objects etched in black on them can be readily altered. The distance of each of the subjects, 6 of whom are examined at a time, from his panel is 1 yard. The objects regarded separately by direct fixation are indecipherable, but when the eyes move from one object to another the angle covered reaches well into the rod area of the retina and scotopic vision is stimulated and it is possible to record what is seen. This principle has been created to encourage observers to employ eccentric fixation in identifying aircraft at night. To be certain that the subjects to be examined are in a comparable state of adaptation they wear dark goggles of equal transmission for half an hour before entering the test room, from which all light can be excluded. Each subject is handed a card illustrating some of the characters which he will be expected to analyze; the light transmission of the goggles is sufficient for their scrutiny. Each subject is handed a board on which is clamped a braille type card. The light in the dark room is extinguished, the goggles are removed and during the fifteen minutes in complete darkness it is carefully explained that there are four similar tests, each corresponding to a metal button on the board, which is placed in such a way that each button corresponds to a transverse grooved line on the braille card. The buttons run down the middle of the board, making a left and a right braille line. Each test exposes first objects and then letters. The subject writes the name or draws the object recognized on the left side, and the letters seen are written on the right side. The letters may be set in abnormal positions and should be copied as set. Each test lasts one minute, and test succeeds test without pause. The illumination on each occasion is slightly increased until the third test is reached, when one minute of glare from an electric lamp is introduced. The subject looks slightly beneath the lamp. When scoring, a differentiation is made between a night pilot of bomber aircraft and an air observer or air gunner. A high degree of night vision is less important in the case of the pilot because he is flying on lighted instruments.

British Medical Journal, London

1:173-208 (Feb. 7) 1942

Industrial Eye Injuries. A. MacNalty.—p. 173.
Hemoglobinometry. C. Rimington.—p. 177.
*Mental Symptoms in Cerebrospinal Meningitis. T. W. H. Weir and C. K. Vautier.—p. 179.
Experience with the Wilson and Blair Medium for Bacillus Dysentery (Flexner). D. B. Bradshaw.—p. 181.
Carotid Cavernous Aneurysm with Fistula. W. J. Roche.—p. 182.

Mental Symptoms of Cerebrospinal Meningitis.—Weir and Vautier found that 3 men with abnormal mental symptoms who were certified had cerebrospinal meningitis associated with wartime effort and overcrowding. Each presented a picture of confusional psychosis: confusion, disorientation, irritability, restlessness and general resistiveness with violent outbursts. Each had a history of alcoholism. The alcoholism might have lowered the resistance to the meningococcus, which was most likely harboring in the nasopharynx of carriers in the vicinity. Meningitis was suspected on finding some degree of nuchal rigidity and commencing retraction of the head. Mild headache appeared only as the patient's mental state improved. A lumbar puncture should be done to determine the nature of the illness. No other case has occurred previously or has arisen since in the area from which each of the 3 patients came. Medical officers in charge of the health of the workers in large industrial concerns and war industries have a special responsibility, for it is among such people that the disease is apt to occur without any warning. Cerebrospinal meningitis should be considered when mental symptoms suddenly develop in any person. All persons with acute confusional psychosis should at first be sent to mental hospitals as temporary patients.

1:209-246 (Feb. 14) 1942

*Treatment of Fresh Compound Fractures and Wounds. J. C. Scott.—p. 209.
*Gastric Lavage in Diagnosis of Tuberculosis in Children: Survey of Seventy-Five Cases. T. W. Davies and C. J. Doherty.—p. 212.
Group Psychotherapy. J. Bierer.—p. 214.
Lung Tumors in Mice: Incidence as Affected by Inhalation of Certain Carcinogenic Agents and Some Dusts. J. A. Campbell.—p. 217.
Isolated Fracture of Carpal Cuneiform. W. P. Greening.—p. 221.

Treatment of Fresh Compound Fractures and Wounds.—Scott points out that those who first see fresh compound fractures and wounds are not sufficiently aware of the urgency of adequate treatment within six hours. The only justifiable cause for delay is the patient's general condition. Early splintage, if a compound fracture is not contaminated, is essential;

otherwise it should not be reduced until the wound is excised. When sedation and splintage are in order, a plasma drip should be started before the operation. Any patient requiring more than 2 pints of fluid should be given blood instead of plasma after the second pint. During incision and excision of all necrotic tissue of a wound a tourniquet should never be maintained in place. Failure to excise a wound because it is more than six hours old is to deny the principle of excision. After approximately forty-eight hours the Winnett Orr principle of incision and drainage is usually sufficient, for if gas gangrene has not developed in that time it is not likely to do so. The wound should be sutured if seen within six hours and, if approximation without cutaneous tension is not possible, sutures should not be used. Conditions in which it is safe to do a primary suture seldom arise in war surgery. If the wound is not sutured and infection is not present the wound should be packed with dry gauze and plaster applied over the gauze. If infection is present, petrolatum gauze to provide the required drainage is used. The limb should be immobilized one joint above and one joint below the wound or fracture. If padding is used under the plaster it must be highly absorbent. When a wound is left open, no window should be cut. If an uninfected wound is sutured there is no need to cut a window. The cutting of a window in the plaster of such a wound suggests doubt as to the surgeon's wisdom in suturing it. Tetanus toxoid may sometimes make antitetanus serum unnecessary, but at present it should always be employed. To start the patient on a course of sulfonamide therapy after his fresh wound has been treated is an admission of failure. When such a patient's temperature rises above 100 F. and infection is present surgery has been faulty, the infecting organism should be determined and the appropriate sulfonamide derivative prescribed. A point cited against the use of the excision-incision closed plaster technic is that gas gangrene starts in the calf, the thigh and the shoulder. If the surgeon is in doubt as to the efficiency of the excision and incision of such a wound, plaster should not be applied for forty-eight to seventy-two hours. If infection does not develop in this time, plaster may be applied. In the earliest stage of gas gangrene usually a clear change in the general condition of the patient occurs, and if this change is noted and acted on directly the diagnosis will be made just as soon as it would have been by repeated inspection of the wound. Serum is of prophylactic value in the treatment of gas gangrene only if adequate doses (100,000 units in twenty-four hours) are given. Of 31 patients with compound fractures and wounds involving joints treated by the author, only 1 died. This patient had a compound fracture of both tibias and died of head injuries within twenty-four hours. A sulfonamide drug was administered to only 3 patients. The average stay in the hospital for all the patients was seventeen days. All were put in plaster.

Gastric Lavage in Diagnosis of Tuberculosis.—Davies and Doherty examined the gastric contents of 75 boys and girls 2 to 11 years of age for tubercle bacilli. Sixty-four of the children had pulmonary and 11 had nonpulmonary tuberculosis. Faucial, nasopharyngeal and middle ear tuberculosis were excluded. Tubercle bacilli of the human type were found in the gastric contents of 24 patients. A positive result was not obtained in any of the nonpulmonary cases. Tubercle bacilli were found in 3 specimens on direct examination after concentration. Ten specimens were positive on culture and guinea pig inoculation, 7 on culture only and in 7 after guinea pig inoculation only. A positive result on direct examination should not be accepted unless confirmed by culture or by guinea pig inoculation. The three positive results on direct examination were also positive on culture or guinea pig inoculation. A parenchymal lesion was present in 22 of the positive cases, and pleural effusions in the remaining 2. In 14 the lesion was in the right pulmonary field and in 4 in the left lung; in 4 others there were bilateral lesions. The gastric contents of all patients with parenchymal lesions should be examined on successive days and frequently during treatment. A child with tubercle bacilli in its stomach contents should be considered infectious until repeated negative results have been obtained. The clinical course of the disease in such children is favorable; the lesion gradually resolves, leaving evidence of calcification or fibrosis.

Lancet, London

1:189-218 (Feb. 14) 1942

Vital Statistics of Second Year of the War. P. Stocks.—p. 189.
*Use of Plasma in Hospital Ship. H. R. I. Wolfe and H. W. Clegg.—p. 191.
Pouch of Hartmann. F. Davies and H. E. Harding.—p. 193.
*Intraperitoneal Sulfapyridine in Acute Abdominal Conditions. R. H. Gardiner.—p. 195.
*Persistent Myalgia Following Sore Throat. L. E. Houghton and E. I. Jones.—p. 196.
Pyruvic Acid Test for Vitamin B_1 Deficiency in Children. H. E. C. Wilson.—p. 199.
Barbiturate Poisoning Treated with Picrotoxin. M. Fishman.—p. 199.

Use of Plasma in a Hospital Ship.—Their experience with the administration of plasma to 16 severely burned patients in a hospital ship prompts Wolfe and Clegg to suggest that its use be more widespread at sea. The treatment of shock in such casualties during transport to base hospitals can save many lives. The authors prefer dilute citrated plasma, as it can be easily prepared and supplied in one container ready for use after simple filtration. Experience may prove that it can be stored at room temperature; meanwhile refrigeration, especially in tropical and subtropical climates, is desirable. Such facilities are available on ships. Freezing solid, if possible, is recommended. The burns of the 16 patients were second degree and extensive or complicated by associated injuries. All the burns but one were treated by the tannic acid, silver nitrate technic (Bettman 1935). The burns of only 2 patients failed to heal within a fortnight. There were 7 deaths; 4 were of severely burned patients who showed no response and died within fourteen hours of admission, 1 responded well to plasma but died twenty-nine hours after admission, 1 responded well to plasma but symptoms of burn toxemia developed on the fourth postoperative day and he died two days later of capillary bronchitis, and 1 acquired streptococcic tonsillitis and pharyngitis and he died eight days after admission of massive obstructive atelectasis due to capillary bronchitis. The degree of hemoconcentration after plasma has been given must be estimated repeatedly. Plasma transfusion in burns is usually necessary for thirty-six to forty-eight hours, because during this period plasma is still being lost into the burned area. In burns if plasma infusion was delayed or treatment of the burn postponed local edema progressed, whereas after plasma was given most of the edema disappeared within twelve hours. When the burned surface is sealed by coagulation, plasma infusion will restore to the circulation the fluid lost in the tissue spaces, provided capillary damage is not irreparable. The cutaneous loss can be balanced by the oral administration of fluid, supplemented if necessary by rectal and intravenous saline solution. Saline baths are of value when the patient's life is not threatened, but they have no place in the treatment of extensive superficial burns.

Intraperitoneal Sulfapyridine in Acute Abdominal Conditions.—Gardiner used sulfapyridine intraperitoneally in 15 cases of perforated appendix, in 2 of perforation of the sigmoid colon and in 2 of resection of a gangrenous small intestine. All but 1 patient recovered and none had the usual prolonged outpouring of thick pus from the abdominal cavity and wound. Thus hospitalization was shortened. One patient died of peritonitis. In further similar trials of the drug the bacteriology of the abdominal fluid should be determined and the level of the sulfonamide derivative in the blood should be recorded.

Persistent Myalgia Following Sore Throat.—An epidemic of 7 cases of myalgia is reported by Houghton and Jones and its clinical features are discussed. The 7 patients were members of the nursing staff in whom sore throat developed; in 6 it was followed in eight to twenty-one days by pains in the muscles and severe headache. Subungual hemorrhages in the toes were observed in 2. Pyrexia and pains persisted for up to five months; menstrual disturbances and spontaneous epistaxis were also present. All laboratory studies, including cutaneous tests and precipitin reactions for trichinosis, were negative. Biopsy of a painful indurated area in a muscle showed no abnormal changes, and no treatment was of any value. All the patients recovered without any sequelae. It is suggested that the condition was due to an unidentified myotropic strain of virus.

Boletín Clínico, Medellín

7:483-534 (Oct.) 1941. **Partial Index**

*Edema and Cachexia from Ascaridiasis. N. Villegas.—p. 483.

Edema and Cachexia from Ascaridiasis.—Villegas describes a type of cachexia in nonsyphilitic children with ascaridiasis which is characterized by excessive coldness of the extremities, bleeding gums, pellagroid mucosal and buccal lesions, dermatitis, anasarca, vomiting, diarrhea or constipation, meteorism, loss of appetite, hypotension, muscular and psychic asthenia, somnolence and rapid progressive decline in the weight and in the general condition of the patient. It is observed in poorly nourished children of tropical and semitropical countries. Treatment with diuretics, anthelmintics, epinephrine, vitamins, tonics and hormone preparations usually fails. Mortality is 80 per cent. Good results were obtained from administration of 8 drops daily of nux vomica for ten to fifteen days. The general condition improved from the first two or three days of the treatment, during which the patients eliminated a large number of ascarids and regained their appetite. After three to five days of the treatment, 13 Gm. of castor oil with 4 drops of volatile oil of chenopodium is given. The diet consists of milk, fruits, meat, vegetables and carbohydrates given as soon as the treatment starts. Permanent cure was obtained in all cases. Edema of the feet disappeared in the course of the treatment.

Revista Médica Brasileira, Rio de Janeiro

11:283-404 (Oct.) 1941. **Partial Index**

*Vulvovaginitis in Young Girls. J. Alves de Medeiros.—p. 314.
Cancer of the Thyroid. L. Galvão.—p. 333.

Vulvovaginitis in Young Girls.—De Medeiros reports 23 cases of vulvovaginitis in girls between the ages of 6 and 10 years. Treatment consisted in a daily sitz bath with a 1:8,000 potassium permanganate solution and tonics. Patients with oxyuriasis but without gonococcic infection were also given specific vermifuges. A cure resulted in three to four months. Patients with gonococcic infection were given protein therapy and antigonococcus vaccines. The treatment was supplemented by administration of sulfanilamide. Estrogen was administered to patients who exhibited disorders of the genitalia. Cure was verified in all cases by a follow-up of the patients for several months.

Revista de la Sociedad de Pediatría de Rosario

6:197-290 (Sept.-Dec.) 1941. **Partial Index**

*Biermer's Pernicious Anemia in Infant. A. R. Dutruel and S. L. Rabasa.—p. 197.
*Bronchoaspiration in Asphyxia of Newborn Infants. M. González Loza and J. C. Santa María.—p. 228.

Pernicious Anemia in Infant.—Dutruel and Rabasa review the literature and report a case of pernicious anemia in an infant 10 months old. The appearance of the patient and the alterations of the peripheral blood and of the sternal bone marrow were typical of Biermer's anemia. There were hypochlorhydria and diminished reflexes in the legs. Liver therapy resulted in clinical improvement, which was maintained by feeding raw liver in the diet. Discontinuance of the latter was followed by a recurrence. The disease should be called megaloblastic rather than pernicious anemia. A diagnosis of pernicious anemia in an infant is permissible only when the changes in the blood and in the sternal bone marrow are typical. A favorable response to liver therapy confirms the diagnosis.

Bronchoaspiration in Asphyxia of Newborn Infants.—Asphyxia produced by aspiration of amniotic fluid and mucus from the mother's genitalia is frequent in normal children, and even more so in the premature and weak newborn infants. It may recur several times during the first two days of life and may be the cause of pulmonary edema or bronchopneumonia at a later date. González Loza and Santa María report successful results from bronchoaspiration by means of a cannula carefully introduced through the glottis into the bronchi under laryngoscopic control. After aspiration, oxygen is insufflated under pressure through the cannula. A mixture of oxygen and carbon dioxide is insufflated when stimulation of respiration is indicated. The procedure can be repeated, if necessary, after twelve or twenty-four hours. For two or three days after performance of laryngoscopic bronchoaspiration the secretions may be removed from the mouth and pharynx by simple aspiration. The authors advise having the necessary equipment for laryngoscopic bronchoaspiration in maternity hospitals.

Archiv für Dermatologie und Syphilis, Berlin

181:471-592 (Dec. 31) 1940. **Partial Index**

Sugar Content of Skin Surface, Skin Dialysate and Sweat. W. Schulze.—p. 471.
Atrophodermia Vermiculata. H. Groneberg.—p. 495.
Cutis Laxa with Increased Vulnerability of Skin. Schiemann.—p. 507.
*Histopathology of Liver in So-Called Arsephenamine Jaundice Studied by Means of Aspiration Biopsy. K. Roholm and N. B. Krarup.—p. 521.
Mibelli's Porokeratosis. G. Miescher.—p. 532.
*Articular Changes in Late Congenital Syphilis. H. O. Loos.—p. 549.
*Familial Acrogeria. H. Gottron.—p. 571.

Aspiration Biopsy of Liver.—Roholm and Krarup state that arsphenamine jaundice developing in syphilitic patients is not a syphilitic lesion, since it is also observed after arsphenamine treatment in the absence of syphilis. Attention has been called to the similarity between arsphenamine jaundice and epidemic hepatitis. It is believed that arsphenamine damages the liver and prepares the way for the unknown virus of epidemic hepatitis. The microscopic changes in the liver are identical in epidemic hepatitis and in the arsphenamine jaundice. The authors report pathologic studies on patients with acute diffuse hepatitis subjected to aspiration biopsy according to the method of Iversen and Roholm. Some of these had been treated with arsphenamine, and the liver changes observed in them did not differ from the typical picture of acute epidemic hepatitis. The authors present histories of 10 patients with arsphenamine jaundice on whom eleven aspiration biopsies were done. The microscopic changes in the liver were identical in the so-called arsphenamine icterus and in the acute epidemic hepatitis. The two disorders are identical. Arsphenamine reduces the resistance of the liver to the unknown virus of acute epidemic hepatitis.

Articular Changes in Late Congenital Syphilis.—Loos states that articular changes of late congenital syphilis, which were quite frequent before 1900, have decreased noticeably in recent decades. The manifestation is evident about the fifth year of life and is most frequent during the tenth year. The thirtieth year can be taken as the upper age limit of manifestation. The knee is the most frequent localization. From the clinical point of view the author differentiates between articular changes without and with involvement of bones and cartilages. Those without osseocartilaginous involvement include (1) serous synovitis (simple hydrarthrosis), in which usually the knee joint shows a profuse but not very painful hydrops, and roentgenologic changes are absent; (2) hyperplastic synovitis, in which the articular capsule exhibits inflammatory hyperplastic changes that appear in the roentgenogram as thickening. The articular changes with involvement of bones and cartilages include (1) hydrops with epiphysitis and (2) pseudotumor albus syphiliticus. Hydrops with epiphysitis is the most frequent form of congenital late articular syphilis. Four of the author's six observations belonged to this group. Aside from the customary clinical picture of hydrops with thickening of the wall and epiphysial swelling of the bone there may be severe deformities with bony ankylosis. The pathologic anatomic basis of this process consists in gummatous inflammations of the bone ends, of the articular cartilage and of the soft parts. Pseudotumor albus syphiliticus, the rarest form of late congenital arthrosyphilis, was designated thus because of its similarity to the tuberculous fungus. The rarity of ulcerous destruction of the skin above the diseased joint prevents its being mistaken for tuberculosis. In addition to bone changes such as multiple gummas and osteomyelitis gummosa tibiae, ocular lesions are frequently associated with the articular lesions of late congenital syphilis. Parenchymatous keratitis and disseminated choroiditis are particularly frequent. The combined administration of neoarsphenamine and bismuth compounds and

the oral administration of iodine together with local electrophysical measures produced favorable results in late congenital arthrosyphilis.

Familial Acrogeria.—Gottron applies the term acrogeria to a disorder which he observed in siblings, a girl aged 19 and a youth aged 16. Both had unusually small hands and feet and severe atrophy of the skin on these parts. The author thinks that this disorder is a localized and abortive form of progeria. The familial occurrence of this rare condition suggests a genotypic origin. From this point of view, acrogeria can be considered one of the as yet little known hereditary disorders of the connective and fat tissues.

Zeitschrift für klinische Medizin, Berlin

138:687-806 (Dec. 28) 1940. **Partial Index**

Changes in Serum Proteins in Hepatic Diseases and Their Diagnostic Significance. T. Saĝlam and B. Berk.—p. 687.
Experimental and Clinical Studies on New Sulfonamide Derivatives. J. Vonkennel, J. Kimmig and B. Korth.—p. 695.
*Hepatic Puncture as Practical and Valuable Clinical Method. W. Kofler.—p. 744.
*Specific Prophylaxis of Epidemic Influenza by Inhalation of Antiserum. A. A. Smorodinzew, A. G. Gulamow and O. M. Tschalkina.—p. 756.
*Rheumatoid Sepsis. H. Oettel.—p. 773.
Diagnosis of Auriculoventricular Rhythm and Block. O. Reiner.—p. 783.

Hepatic Puncture.—Kofler directs attention to the recent method of Iversen and Roholm (*Acta med. Scandinav.* **102:**1 [Sept. 23] 1939; abstr. THE JOURNAL, Dec. 9, 1939, p. 2194). At his clinic in Vienna this technic has been used in about one hundred punctures on patients ranging in age between 16 and 77 years. Stasis liver, fatty liver, various forms of icterus, cirrhosis and carcinoma were some of the conditions in which hepatic puncture was done. In some of the cases the puncture was repeated at weekly or monthly intervals. The technic of the intravital aspiration biopsy is described in detail and the possible dangers are discussed. Complications may be of four different types: hemorrhage, infection, injury to other organs and penetration of air into the hepatic tissue. The last named complication is obviated by the fact that no aspirators are used. Injuries of other organs can generally be avoided. When they do occur they usually heal without surgical intervention and without complications. The danger of the development of a hepatic abscess as the result of defective sterility or of a peritonitis or pleuritis from the puncture of an existing abscess is slight. The chief danger and practically the only one is that of hemorrhage. It can be avoided by careful preliminary examination and preparation of the patient. Aspiration biopsy should never be done in the presence of a hemorrhagic diathesis. Hepatic puncture has demonstrated that a hepatitis in Eppinger's meaning of that term is the basis of catarrhal icterus.

Prophylaxis of Epidemic Influenza by Inhalation of Antiserum.—Smorodinzew and his collaborators emphasize that the prophylactic use of specific influenza serum will be successful only if the disorder in question is actually epidemic influenza and not some other disease. English as well as Russian investigators have demonstrated the different etiology of disorders all of which were designated as influenza. The virus of epidemic influenza is rarely encountered in sporadic cases of influenza, and there are various serologic types of influenza virus. The anti-influenza serum, which effectively neutralizes the typical strain used for its production, may have little effect on other strains. For this reason it is essential to produce serums with a large "spectrum" of antibodies. The authors resorted to the prophylactic inhalation of antiserum for the first time in the influenza epidemic of February and March 1939. The finely dispersed serum was inhaled for five minutes through a respirator, the tube of which was connected with a chamber containing a spray that was activated by an electric ventilator. From 2 to 3 Gm. of serum was inhaled in the course of five minutes. The inhalator apparatus used by the authors had fifteen outlets or respirator attachments, so that 15 persons could be treated simultaneously. The inhalation, whether done once or repeated after an interval of from ten to fifteen days, causes neither local nor general reactions and is therefore applicable in large groups. It produces a noticeable reduction in influenza morbidity. Of 501 employees of a large department store who were subjected to prophylactic serum inhalation at the onset of an epidemic of influenza and again after from ten to fifteen days, only 4 developed a mild form of influenza (0.8 per cent), whereas of an untreated control group of 1,825 employees 150 (8.2 per cent) developed influenza. The authors conclude that inhalation of anti-influenza serum is not only of therapeutic but also of prophylactic value.

Rheumatoid Sepsis.—According to Oettel, rheumatism may be only a link in a long chain of reactions in infectious processes. All transitional forms have been observed from sepsis by way of pyemia to sepsis lenta and to rheumatoid. The author reports 8 cases of rheumatoid sepsis. There appeared to be transitions between septic and rheumatoid tissue reactions. The simultaneous existence of hyperergic and septic reactions becomes manifest in the clinical syndrome "rheumatoid sepsis" and can be distinguished from septic processes in the restricted meaning of that term. Septic processes of the skin and panarteritis are symptoms of rheumatoid sepsis; rheumatism develops only when the septic component predominates. The first mentioned symptoms may be the signal of septic rheumatism, but rheumatism may also exist in their absence. In addition to splenic tumor and parenchymal degeneration, a threatening circulatory weakness may develop. Bacteriologic examination often demonstrates pleomorphic streptococci. The septic focus of rheumatoid sepsis seems to be chiefly in the periphery. Septic rheumatism may run its course without endocarditis; in the severe form it may be fatal. Favorable therapeutic effects were produced with sulfonamide preparations and with the transfusion of febrile blood (from donors treated with colon bacillus vaccine).

Zentralblatt für Psychotherapie, Leipzig

12:193-320 (Nos. 4/5) 1940. **Partial Index**

Psychotherapy and Heredity. H. Luxenburger.—p. 195.
Phenomena of Sound Eideticism in Neurotic Child and Their Modification by Autogenous Training. Martha Schultze-Niemann.—p. 241.
Problem of Frigidity. F. Besold.—p. 249.
Causes of Occupational Instability in Dissocial Delinquents. O. Schurer von Waldheim.—p. 256.
*Electric Shock Therapy by Cerletti Method: Preliminary Report. O.-L. Forel.—p. 267.
*Electric Shock Therapy in "Maison de Santé de Malévoz," Monthey, Valais, Switzerland. A. Repond.—p. 270.

Electric Shock Therapy by Cerletti's Method.—Electric shock therapy has been used at Forel's clinic since the beginning of 1940, and its results were found to be superior to other methods of shock therapy. The application is rapid and simple; there has not been a single fatality; there is a complete and permanent amnesia regarding the shock. It is possible to repeat the shock on the same or the next day, although repetition after two days is preferred. The patient generally does not object to repetition of the treatment. It is useless to continue the method if the result is negative after from five to fifteen shocks. The indications for electric shock are the same as for other forms of shock therapy. Psychotherapy is an indispensable accompaniment of the electric shock therapy. Patients should not be told about the epileptic convulsions. The patient knows that it will induce sleep and that he will wake up without recollecting what has happened. The apparatus should be kept out of sight. The patient's awakening, which is frequently accompanied by "primordial anxiety," deserves particular attention, because in the hours following it he is particularly amenable to psychotherapy. The changes in behavior and emotions give the impression of a catharsis: there is a relative release which makes possible an approach to the subconscious.

Electric Shock Therapy.—Repond describes observations in 38 cases in which electric shock therapy was employed. Results are particularly favorable in melancholia and in acute schizophrenia, especially in cases in which stupor is present. Cure was obtained in 18 cases and great improvement in 11; in the remaining 9 the treatment was ineffective. It is still obscure why patients with the same symptomatology fail to react while others react quite readily to this therapy. Constitutional factors might be responsible.

Book Notices

Acute Alcoholic Intoxication: A Critical Review. By Henry W. Newman, M.D. Cloth. Price, $2.50. Pp. 207, with 7 illustrations. Stanford University: Stanford University Press; London: Oxford University Press, 1941.

This is a timely review of the problem of acute alcoholic intoxication. The volume is divided into two parts. The first part describes the general actions of ethyl alcohol with a careful consideration of the absorption, distribution, excretion and combustion. The author believes that the distribution of alcohol in the body is sufficiently constant to permit a fairly accurate prediction of the blood alcohol concentration after any given dosage of alcohol. Since the rate of fall of this concentration is fairly constant, the blood concentration at any time after ingestion may be predicted with accuracy. As regards the excretion of alcohol, approximately 10 per cent of ingested alcohol can be accounted for in the breath and the urine. The remaining 90 per cent or more is metabolized in the body. The metabolism of alcohol is of interest. The first changes in the combustion of alcohol take place in the liver, leading to the production of acetic acid. Then, probably rapidly, the intermediate products are burned to carbon dioxide and water or converted to other substances which can be burned or stored in the body. When dextrose is not being burned, the rate of alcohol metabolism is decreased. Acceleration of alcohol metabolism occurs after the administration of protein or amino acids, after the administration of relatively large amounts of insulin or after increase of the body temperature with general increase in body metabolism. The second part of the volume is concerned with the toxicology of ethyl alcohol. This has chapters on acute toxicity, the chemical diagnoses of drunkenness and the treatment of acute alcoholic intoxication. The author believes that blood is the most satisfactory material for alcohol analysis. Breath analysis has the advantage of being simpler but is considered less reliable. There is an excellent discussion of the legal definition of intoxication prevailing in some states. The author reviews the various methods of treatment of acute alcoholic intoxication and accurately indicates that there are few therapeutic procedures of proved clinical value. When alcoholic intoxication is so severe as to cause respiratory failure, 10 per cent carbon dioxide inhalation, without rebreathing, is indicated. There is limited use for subconvulsive doses of metrazol to stimulate respiration. Also intravenous dextrose, with or without small doses of insulin, appears to be helpful. There is no consideration of the psychobiologic factors underlying alcoholism. The volume is clearly written and recommended as a careful review of the problem of acute alcoholic intoxication.

Fondo de ojo a la luz de sodio (luz amarilla). Por Justo Lljó Pavía. Paper. Price, 18 pesos. Pp. 199, with 101 illustrations. Buenos Aires: Editor "El Ateneo," 1941.

The lamp employed is an Osram lamp, in which the volatilization of sodium ions on the walls of the tube produces an intense yellow light. Kleefeld employed it for the purpose of better visualizing the fundus of eyes with cloudy media and of observing lesions deep in the retina, the nearly monochromatic light achieving better penetration of the tissues than ordinary light. The author reports his findings with this light in various conditions in comparison with those by ordinary and red free light. The conditions covered in the report are retinal detachment, persistent medullated nerve fibers, macular degeneration, various stages of macular lesion, macular hole, hypertensive retinopathy, trauma to the retina and optic atrophy. The observations in these conditions are visualized by the illustrations, chiefly reproductions of fundus photographs. Many are examples of the author's "panoramic" fundus representation, in which a number of photographs are joined together so as to show a large area of the fundus. In retinal detachment the sodium light allows observation of fine changes in the course of the nerve fibers, of traction folds and of changes in the paramacular reflex. In persistent medullated nerve fibers the outline of the disk can be seen best by this light. In macular degeneration very delicate defects in the internal retinal layers visible can be clearly outlined. In edema of the macula (early lesions) swelling of the nerve fibers may be seen and fine changes in the caliber of the vessels. The choroidal vessels are seen more clearly than with other methods. Very early cystic changes are also visible. In hypertensive retinopathy the connection between hemorrhages in the smallest arterioles can be traced and objects in the small veins giving rise to hemorrhages can be seen. In a number of conditions the findings in the inner retinal layers were similar to those of red free light, while in deeper lesions red free light was inferior to sodium light. Of the forty-three references listed, fourteen are to previous articles by the author, whose special interest has been fundus photography and the refined study of fundus lesions.

Accepted Dental Remedies Containing a List of Official Drugs Selected to Promote a Rational Dental Materia Medica and Descriptions of Acceptable Nonofficial Articles. Council on Dental Therapeutics. Seventh edition. Cloth. Price, $1. Pp. 309. Chicago: American Dental Association, 1941.

No one who has watched the successive editions of this valuable and compendious volume can refrain from remarking on the success with which the Council on Dental Therapeutics has implemented the last words of its motto ". . . for Dentistry." The present volume contains in admirably accessible form a concise and up to date statement of the materia medica and therapeutics needed by the practicing dentist. For example, while the chapter on vitamins offers a brief and well informed discussion on all the known vitamins, with emphasis on their utilization by means of a well chosen diet, the only preparations accepted and described are those containing A and/or D, which are most useful from the dental point of view. The necessity of cooperation between physician and dentist in this field is emphasized.

Of special dental interest are such chapters as those on adherent powders for dentures, denture cleaners and dentifrices, all concise, enlightened and effectively informative. The sanity and clarity of the dentifrice chapter is particularly commendable. In less than three short pages it gives a comprehensive and obviously well documented statement of the usefulness and limitations of dentifrices, clearing up many of the misconceptions that have resulted from dangerous and misleading commercial propaganda. Among the seventy or more accepted preparations the most widely advertised ones are conspicuous by their absence. The names of some of them may be found in the "Bibliographical Index to Proprietary and Unofficial Articles Not Included in A. D. R.," which appears in the back of the book and refers mainly to unfavorable reports published in the *Journal of the American Dental Association*.

In the appendix material there also appear a valuable outline on symptoms and treatment of acute poisoning, a concise therapeutic index in connection with an excellent classification of drugs for specific dental use, and several pages of formulas and prescribing suggestions, which should be of great usefulness to the practicing dentist. The terminal index is adequate and not profuse.

Although Accepted Dental Remedies is intended primarily for the dentist, it has much information that is of value for the physician and the pharmacist.

Criminal Youth and the Borstal System. By William Healy, M.D., and Benedict S. Alper. Cloth. Price, $1.50. Pp. 251. New York: Commonwealth Fund; London: Oxford University Press, 1941.

This small volume is a valuable addition to the series of studies which Dr. William Healy and his collaborators have contributed to American criminology. The authors once more call attention to the unsatisfactory present management of penal institutions in this country. (Statistical studies report 80 per cent recidivism in certain institutions!) The authors' concise and vivid review of the English Borstal system is both instructive and enjoyable reading.

"Borstal village stands on a hill above Rochester, looking on the River Medway, and gives its name to the prison for boys and to the system of training which is in use there." The Borstal system is perhaps the most consistent attempt at substituting for punishment reform in the case of the youthful criminal who is still approachable and changeable. No one, even if convicted of an offense, can be committed for Borstal training until the prison commissioners have approved his suitability for such training. Originally, youths between 16 and 21 were

eligible; later the age limit was extended to 23. Borstal training consists of a four year period consisting of two indeterminate stages: from six to thirty-six months in an institution and the unexpired remainder of the four year term on parole to the Borstal Association.

The humanitarianism of the Borstal system is not the expression of any sentimentality but is fully consistent with its aim to create a human and occupational environment for the youthful criminal during his imprisonment which may have both a reforming influence on his personality and also prepare him for a trade. The main emphasis is on a careful selection of a suitable personnel. Experience, some training, a broad point of view, maturity and ability to get along with people are prerequisites. Members of the Borstal system receive civil service status, which gives them economic security.

"That the leaders have been able to draw such a fine body of people to work with them in many capacities is one of the most remarkable things about the Borstal system. Its success has been entirely dependent upon this." The core of the whole system is the utilization of personal influence. The authors, after carefully evaluating the existing evidence, come to the conclusion that "unquestionably the results of the Borstal system are relatively much better than those obtained by the reformatories of this country."

Healy and Alper also pay attention to certain weaknesses of the Borstal system. They think that it does not take full advantage of the great possibilities offered by this system for the scientific study of the personality and social factors of criminal careers by experts—psychiatrists and trained social workers. Only such studies would warrant a real progress in the field of the treatment of the criminal. The reader is left with the impression that the Borstal system without such methodical studies may remain an isolated experiment in the field of criminology and not have the great revolutionary effect which it could have if its principles could be scientifically tested and improved. The aim of the authors is to make the American public acquainted with it and hope that its best features could be used under the model youth corrective authority act of the American Law Institute. In this country there are all the preconditions for further developing this system with the help of the great number of well trained social workers and psychiatrists who for many years have been interested in the study of criminal careers.

Diagnostic anatomo-topographique de l'obstruction artérielle coronaire. Sixième partie: La thrombose artérielle souspéricardique gauche, cause de l'ischémie aigüe du myocarde. Par le Docteur Guillaume A. Bosco, professeur titulaire de sémiologie et de propédeutique clinique à la Faculté des sciences médicales de Buenos Aires. Paper. Pp. 276, with 81 illustrations. Buenos Aires, 1941.

Myocardial ischemia is the sequel of a coronary arterial thrombotic process which appears in the left ventricle because this ventricle, in contrast with the right, offers favorable conditions for its appearance. This predisposition is explained by the pathogenic factors of the thrombosis: arterial or anatomic-pathologic, hemodynamic or circulatory, mechanical or myocardial. These factors combine to provoke the arterial obstruction in a determined site, prepared in advance by the circulatory status of the heart—the subpericardial zone. That this ischemia has been erroneously considered as right ventricular has been due to lack of knowledge of the anomalous coronary arterial distribution, that is to say the termination of the left circumflex artery in the posterior wall of the right ventricle, and, on the other hand, the lack of basic conceptions, such as those which the author describes. Thus is explained why the lesion produced by left coronary arterial obstruction has been generally accepted as right ventricular infarction. The illustrations are beautifully reproduced and fortify the author's thesis. His investigation led him to adopt the following nomenclature:

1. Anterior coronary syndrome, produced by thrombosis of the anterior descending branch, and its sequel, anterior apicoseptal infarction.

2. Lateral coronary syndrome, produced by thrombosis of the left circumflex when of normal distribution, and its sequel, left parietolateral infarction.

3. Posterior coronary syndrome, produced by thrombosis of the left circumflex when of anomalous distribution, and its sequel, posterior parietoseptal infarction.

A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Sixth edition. Cloth. Price, $8.75. Pp. 1298. Philadelphia & London: W. B. Saunders Company, 1942.

As the author states in the preface, the developments have become so extensive that almost every paragraph had to be rewritten. Changes are evident from the table of contents, which has been radically rearranged, to the individual chapters, the bibliography and the index. Probably of most current interest are the changes in the sections on the sulfonamides, vitamins, hormones, anesthetics and hypnotics and synthetic autonomic agents. To imply that the changes are confined largely to these sections would create an entirely erroneous impression, since revisions are evident throughout the book. Although the volume has increased in size by only one hundred and eight pages, the present edition records an abundance of valuable information not available in the fifth edition. This increase of material, added without greatly affecting the size of the book, is made possible by the omission or condensation of matter that has become of minor importance. Also the author has abandoned the policy of listing and describing all preparations of the United States Pharmacopeia and of the British Pharmacopeia, and has restricted bibliographic references to the last twenty years (a bibliography to 1920 inclusive is listed in the fifth edition). A further change in Sollmann's book is the preference given to English titles. The sixth edition of Sollmann's Manual of Pharmacology will remain one of the most useful and valued reference works on pharmacology.

Internal Medicine in Old Age. By Albert Mueller-Deham, M.D., Associate Visiting Physician, Welfare Hospital for Chronic Disease (Second Division), Department of Hospitals, New York City, and S. Milton Rabson, M.D., Assistant Professor of Pathology, New York Post-Graduate Medical School, Columbia University, New York (on leave). Cloth. Price, $5. Pp. 396. Baltimore: William Wood & Company, 1942.

Here is a truly clinical volume based on an extensive experience, on clinical reports, and on some two thousand necropsies and special studies of the pathology of senility. The authors have had much experience in the field discussed, and they provide a bibliography to the major references in the field. The general considerations of old age are followed by special reference to the system of the body and the changes brought about by old age in these systems. A brief section is concerned with infectious diseases. The advice is thoroughly scientific; there is little reference to the strange pharmacopeia often found in works of foreign origin. The authors have had personal experience with cases in which rejuvenation was attempted by the Steinach and Voronoff technics. They make this positive statement: "In not one case, however, was there any ultimate evidence of restored efficiency or of continued sexual potency." Indeed, they are not even inclined to accept the claims that have been made for these operative procedures as a means of halting the advances of senility. They say "It is expedient neither to suggest their use nor to advise against them should the patient desire such operation; rather let the physician emphasize the possible hazards in overtaxing various organs. Exceptional forms of intervention may be justified in exceptional men." As far as the use of glandular therapy is concerned, they believe the results inconclusive but worthy of continued investigation.

Conceptual Thinking in Schizophrenia. By Eugenia Hanfmann, Ph.D., Instructor of Psychology, Mount Holyoke College, South Hadley, Massachusetts, and Jacob Kasanin, M.D., Chief, Psychiatric Service, Mount Zion Hospital, San Francisco. Nervous and Mental Disease Monographs, No. 67. Boards. Price, $2.50. Pp. 115, with 2 illustrations. New York, 1942.

Vigotsky, an astute Russian psychologist, developed a test for studying conceptual thinking in schizophrenia. Like Goldstein, his fundamental thesis was that in the schizophrenic ability to think in abstract concepts was lost and that regression to primitive levels of concrete individual terms occurs. Grouping of individuals is made according to complexes and not to classes. The authors have taken over Vigotsky's apparatus and tested many patients with his method. They give details of the technic, methods of scoring and analysis. The authors confirm Vigotsky in his conclusion that in the schizophrenic there is a reduction of conceptual thinking. Certain minor corrections of the Russian theory are made. For any one wishing to learn the fundamentals of the test the book is highly recommended.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

SUPERTROPICAL BLEACH FOR GAS BURNS

***To the Editor:*—It is requested that information regarding the preparation of "supertropical bleach" be forwarded to this facility. An evaluation of this substance in the treatment of gas burns (mustard-lewisite) and suggestions for alternate treatment would be appreciated.**

**Comdr. C. G. DeFoney, M. C.,
U. S. Naval Air Station, Alameda, Calif.**

ANSWER.—Supertropical bleach is a stabilized chlorine containing compound similar to HTH prepared by the Mathieson Alkali Works, Incorporated, 327 Guilford Avenue, Baltimore. It is not, however, exactly the same as HTH but is stabilized by a secret process which is known to the company mentioned. It is understood that any high test bleach such as HTH itself is satisfactory for the first aid treatment of mustard or lewisite burns. The preparation is made up for use by adding one to two parts of water to the bleach powder. The early application of such bleach paste to mustard or lewisite burns is undoubtedly of value, depending on how soon after the burns occur the treatment can be carried out. There is probably no better prophylactic treatment for mustard burns than the proper and early application of bleach. However, the Army Medical Corps recommends two superior forms of early treatment for lewisite burns. The first of these is the alternate and repeated swabbing of lewisite contaminated areas with sodium hydroxide solution and with alcohol. This should be instituted at the earliest possible moment. The sodium hydroxide solution is a 10 per cent solution in 30 per cent glycerin. The second method recommended by the Army is the repeated swabbing of the lewisite contaminated area as early as possible with fresh solutions of 3 per cent hydrogen peroxide. The peroxide method is even superior to the sodium hydroxide-glycerin mixture. In summary, it would be wise to have on hand sufficient quantities of high test bleach for both mustard and lewisite burns, if nothing else is available, and if possible to have sodium hydroxide and peroxide available for lewisite. Peroxide is very unstable and therefore should not be depended on entirely as protection against lewisite.

HAY FEVER DUE TO RAGWEED

***To the Editor:*—A woman who in the past has had hay fever from June 1 to the first fall frost was given last year cutaneous tests for oak, plantain, timothy, ragweed, cocklebur, lamb's quarters and house dust. She had a strongly positive reaction to house dust, a moderately positive reaction to timothy and the remainder were negative. She was given ten injections of mixed grasses, a dose of 1,000 units being reached, and was symptom free until August 1, when hay fever started and continued until the first frost. The same cutaneous tests were repeated this year with the same results. Could you make suggestions as to the possible cause of attacks from August 1 to frost other than ragweed? Do you think it likely that ragweed is the cause with two negative cutaneous tests? Where would you fit the strongly positive reaction to house dust into the picture and how include in the treatment if necessary to include it?**

Basil C. Gray, M.D., Oneonta, N. Y.

ANSWER.—It is rather obvious that this patient, living in the state of New York, is ragweed sensitive. Symptoms that come on August 1 and last till the frost in that district are almost always due to the pollen of ragweed. The scratch tests for short and giant ragweed should be repeated. If these are again negative, an intradermal injection with each one separately, or mixed, in a dilution of 1:1,000 should be made, and will in all likelihood be positive as compared to a control test using any diluent. If the intracutaneous test is negative a small amount of raw ragweed pollen should be laid against the inner surface of the lower eyelid and left there for five to ten minutes. If the patient is allergic to ragweed, the eye will become inflamed and will itch and tear. If negative, nothing will happen. If this conjunctival test is negative, it is almost certain that the patient is not ragweed sensitive, because insertion of pollen in the conjunctival sac merely imitates what actually happens during the hay fever season.

It is possible, of course, that foods eaten in the summer only or molds may be the cause of some of the symptoms at least, but molds occur all summer long and are especially prevalent the latter part of July. They do not, however, lead to any such clearcut seasonal symptoms as does ragweed pollen. Mold tests should certainly be made. If any one of the three methods of testing for ragweed (scratch, intradermal or conjunctival) is positive, injections of ragweed extract should be started at once, beginning with 0.10 cc. of a 1:10,000 extract and increasing the dosages approximately 50 per cent at intervals of twice a week, with the usual precautions. As the symptoms occur from June to the first frost, it would seem unlikely that the reaction to house dust is of any significance. It need not be included in the treatment. House dust is much more of a factor in rhinitis and asthma, which occur from the fall to the summer. The injections of grass extract should be started at once. Perennial treatment with extracts of grass and probably of ragweed are advised.

EFFECT OF MERCURY VAPOR ON MAN

***To the Editor:*—A patient reports the following analysis of mercury vapor in the air of his laboratory: 300 to 500 micrograms per cubic meter under normal conditions, an amount which can be reduced to 100 micrograms per cubic meter by proper ventilation. Can you give information concerning the toxic content of mercury vapor in air and what to do to eliminate it? I should appreciate information also on the treatment for metallic mercury poisoning.**

Robert P. McReynolds, M.D., Los Angeles.

ANSWER.—A microgram represents one millionth of a gram. By extension it appears that a person exposed to 500 micrograms per liter of air would take into the body approximately 5 mg. of mercury in a work day, assuming that 10 cubic meters of air would be inhaled during the exposure period, which quantity is probably high. Such an intake represents about five times the maximum tolerable mercury limit, since a recently proposed standard fixes tolerance at 100 micrograms per cubic meter of air. This standard in truth may be high, since by some investigators it is believed that as little mercury as 60 micrograms per cubic meter of air may lead to poisoning. An additional exposure factor possibly may be found in mercury dust that settles on the skin. By way of prevention, a number of suggestions now are made: The quantity of mercury in the air should be reduced to 100 micrograms at most per cubic meter; the spilling of mercury and other opportunities for evaporation of the metal should be avoided; mechanical ventilation should be introduced if necessary to reduce the mercury content of air to the level specified; scrupulous oral and cutaneous hygiene should be exercised; the personal use of alcoholic beverages is undesirable, and constipation should be avoided; at the first sign of poisoning, all additional exposure should cease. In mining operations the spraying of certain chemicals into the atmosphere (a procedure not necessarily applicable to laboratories) is said to render the mercury content of the air harmless. In connection with treatment, no mention is made of the therapy of acute poisoning, since this is unlikely to occur under the circumstances mentioned. For chronic poisoning no drug therapy is of known value, although the use of sodium thiosulfate in doses of 1 Gm. administered intravenously every second day has been advocated. In cases of chronic poisoning the manifestations resemble the symptoms of parkinsonism, and the drugs used for that disease might be of some value. The use of amphetamine sulfate in a dose of ½ grain (0.03 Gm.) twice daily has been suggested. Mouth washes are usually desirable, and among others may be mentioned potassium permanganate 1:8,000, tincture of myrrh 2 per cent, thymol and potassium chlorate. Physiologically the patient with chronic mercury poisoning may profit from some of the following measures: removal from all exciting environmental influences; living in open air, with exposure to sunshine if possible; frequent periods of exercise or work; the promotion of perspiration; a high intake of water and milk; the promotion of a high urinary output and frequent stools; frequent hot baths; massage of parts showing tremors, and abundant use of foods with a known content of vitamins, particularly milk and egg. Additional information may be found in the following references:

Davenport, S. J., and Harrington, Daniel: Mercury Poisoning as a Mining Hazard, Information Circular 7180, Bureau of Mines, U. S. Department of Interior, November 1941.

Johnstone, R. T.: Occupational Diseases, Philadelphia, W. B. Saunders Company, 1941.

TRANSMISSION OF ENDEMIC TYPHUS

To the Editor:—**There have been about 20 cases of very severe murine typhus in my county in the past month and it seems that the rat and the rat flea are the agents of its spread. I understand that it is important to hold down the rat population through various measures, among which the cat is particularly useful. In my own house we find a mother cat more efficient than traps or poison not only because of those she has killed off but also because her presence in the house acts as a rat repellent. Usually before devouring the rat which she has caught elsewhere she brings it to the back door and requests praise. Later she enters the house to nestle up to us and our children or her own kittens. I am not clear as to how particular or specific various types of fleas are to their animal hosts such as the rat flea to the rat, the dog flea to the dog and the cat flea to the cat, and I should like to ask this question: If a cat was to catch a rat which was harboring rat fleas infected with typhus would these fleas tend to transfer to the cat during the intimate contact which exists during the almost always prolonged play that goes on before the rat is slowly devoured? Thus, could it be possible that the cat might on again returning to the household distribute a portion of the rat fleas to human subjects? There is thus the question of specificity of fleas and also the possibility in spite of specificity of haphazard occasional transference such as suggested. Most of my typhus patients give a positive reaction up to 1:640 on the Weil-Felix reaction by the twelfth day of the disease. Last February, twelve days after my third dose of typhus vaccine (total 2.5 cc.), my serum was negative to this reaction. Is this the rule or might this indicate that I have not responded well as to degree of immunity? Of the 40 persons immunized, few have given the slightest local or systemic reaction. This is quite a contrast to typhoid shots.**

M.D., Florida.

ANSWER.—The flea usually incriminated in the transmission of endemic typhus fever from infected rats to man is Xenopsylla cheopis. This flea has been reported found on domestic cats. Cats have been reported as susceptible to laboratory infections with typhus fever and further to transmit typhus infection to the fleas (Ctenocephalus felis) which they harbor. From these reports it would appear as a possibility that the cat could be bitten by an infected X. cheopis flea from the rat and become infected and thus infect its own fleas. These fleas could then transmit the disease to human beings in association with the cat. The cat might also act as a mechanical transmitter of the X. cheopis fleas from the rat to the human being.

It must be realized that the foregoing is a theoretical consideration of the question. Actually typhus virus has been reported to have been isolated from cats, naturally infected, only by European investigators and then only on about two occasions. These observations have not as yet been confirmed in this country.

In answer to the question concerning the Weil-Felix reaction following endemic typhus vaccination, it must be stated that studies along these lines have not as yet progressed to the point where generalizations can be made. Why not make the Weil-Felix test on the 40 persons already immunized, as well as on those who are vaccinated in the future?

ASYMPTOMATIC NERVOUS SYSTEM SYPHILIS

To the Editor:—**A white woman aged 32 was discovered to have a 4 plus Wassermann reaction at the time of delivery of her second child. The blood from the umbilical cord gave a negative Wassermann reaction but seven days later was 1 plus. Blood tests at the time of delivery of her first child, two years before, were said to be negative. Physical examination was negative except for moderate deafness in both ears, which was first noted at the age of 14 and which has progressed ever since. Her husband and first child had negative Wassermann reactions. She did not have any knowledge of contact during the two years in which the disease was apparently contracted. Treatment with neoarsphenamine and bismuth compounds was begun, but after four months the Wassermann reaction was still 4 plus. No Wassermann test was done at the time of delivery of the first child. After the second child, two years later, the test was 4 plus. A spinal puncture was done at the same time and was found to give a 4 plus reaction. Central nervous system symptoms were absent, but the history of deafness starting at 14 suggests the possibility of congenital syphilis. Tryparsamide was given but was not tolerated and was stopped after four weekly injections of 2 Gm. each. The spinal fluid at this time was plus and showed a normal colloidal gold curve. Why is the reaction on the blood of the father and the first child consistently negative? Is this congenital syphilis? How may I proceed with the treatment? What amount of fever therapy is indicated?**

M.D., Milwaukee.

ANSWER.—This patient apparently has asymptomatic central nervous system syphilis. It is difficult to see how she would have been delivered of a child that has congenital syphilis if she herself had congenital syphilis. Third generation syphilis is exceedingly rare, so much so that the patient would have to satisfy some pretty severe criteria before that would be allowed.

It is quite possible for a person with late syphilis to be delivered of a child that is normal and then to have a second child that is suffering from congenital syphilis. It means that their disease is more or less of a latent character and that only now and then are there spirochetes in the blood stream. This may well happen in connection with pregnancy, and the fetus the second time was infected thereby.

Moreover, such a person may well be married and be able to transfer the disease to the next generation and yet the husband may not be infected. It would be rather unusual for such a person to have acute relapse manifestations of a contagious character through which the husband could be infected. If this individual should be used as a donor in transfusions there would be grave danger of transferring the disease.

As to her treatment, it is unfortunate that more exact data are not furnished. Nothing is said about the cell count on the spinal fluid or of the globulin reaction, and little is furnished as to how careful a neurologic examination was made.

The patient should be given a course of fever therapy either with the fever machine or with malaria and, of course, this should be done by an expert who is perfectly familiar with the procedure and with the dangers connected with it. Following this her eyes should be examined very carefully from the standpoint of visual and color fields and if there are no contractions she might be started on a course of tryparsamide, beginning with a dose intravenously of 1 Gm., the injection being given slowly and increased 0.5 Gm. at a dose up to a maximum of 2.5 Gm., the injections being given once a week for a series of twenty-five injections.

With the first injections of tryparsamide the patient should be watched very closely and questioned as to any untoward manifestations in connection with the eyes. Naturally, if she does not stand this therapy well it may be necessary to use alternating courses of arsenicals and bismuth compounds in place of the tryparsamide and in such a case one might employ neoarsphenamine in doses of 0.6 Gm. once a week for a series of ten injections, to be followed with an alternating course of intramuscular injections of bismuth subsalicylate once a week for a series of ten treatments.

In view of the importance of the situation in this case, it would seem advisable to have a consultation with some one in the inquirer's part of the country at the end of this time. It is difficult, in fact almost impossible, to outline the course of therapy that should be followed for such a patient for a longer period than six months.

ELECTRIC SHOCK THERAPY

To the Editor:—**What is your opinion as to the present status of electric shock treatment for mental disorders? I have been consulted as to its value in a man of 50 who has been diagnosed as having general arteriosclerosis and in the last months has shown definite mental deterioration. He exhibits sexual perversions and definite changes in his normal behavior pattern which have necessitated his institutionalization. The institution in which he is confined has advised electric shock therapy. Before rendering judgment on this case I would appreciate your advice in the matter.**

Nelson Clark Walker, M.D., Hackensack, N. J.

ANSWER.—The electric shock treatment for mental disorders has largely replaced, in the last year or two, the use of insulin or metrazol to invoke a "shock." This is partly because, by the electrical method, the dosage is easily controlled, a factor long a deterrent in the use of other forms of stimulation. The dose can be graded until the best results are obtained without injury to the patient. Reports from various sources indicate that the effects produced on mental disease by electric shock are just as good as those from insulin or metrazol. The method, therefore, can be used with a considerable degree of safety if employed by expert hands.

It is more difficult to decide whether a man of 50 with general arteriosclerosis and mental disease characterized by sexual perversions should be subjected to this treatment. In general, arteriosclerosis is considered to be a contraindication for any sort of shock treatment; exceptions must always be made, depending on the amount of arteriosclerosis, the condition of the blood pressure, the general health of the patient and the persistence of his mental abnormalities. If arteriosclerosis is causing a permanent and progressive mental degeneration, no form of shock treatment is likely to be efficient. Such an estimation of the patient's condition should be made only after six months of observation in an institution, in the meantime the ordinarily employed forms of psychotherapy being used. If such treatment fails, electric shock should be taken into consideration as a second step.

All these factors must be carefully evaluated. More than one consultant may be needed. In general, one would feel that if the patient is under good institutional care the advice given by the psychiatrist in charge should have the most serious consideration in the final decision.

A review of the various types of shock and an estimation of their efficiency up to 1941 will be found in *Shock Treatment in Psychiatry*, by Lucie Jessner and V. Gerard Ryan, New York, 1941.

TREATMENT OF SYPHILIS IN SEAMEN

To the Editor:—In the management of active syphilis in seamen what is the shortest possible time to keep them from returning to sea and what type of treatment schedule should one employ? What is the answer to the same questions in the case of latent syphilis? Because of the war, early return to sea is very important and stops between ports are at intervals of about three weeks or more.

A. J. Reich, M.D., New York.

ANSWER.—The ideal treatment for active syphilis in seamen would be the use of the intravenous drip, but as this is still in the experimental stage it does not seem wise to recommend it.

In acute syphilis intravenous injections of mapharsen are recommended three times a week for three weeks, and in this period give the patient a weekly injection of bismuth subsalicylate 2 cc. intramuscularly.

For the three weeks that the men are going to be on the ocean, it is recommended that they be given sobisminol mass 2 capsules three times a day. On their return it probably would be possible to get them to stay for one week and give them three more intravenous injections and one injection of bismuth subsalicylate intramuscularly. As they go out to sea again, the same procedure should be employed with sobisminol mass.

By alternating these treatments it would be possible to give the patient twenty-four injections of bismarsen within a period of six months, after which there seems to be no reason why it would not be practicable to have them use the sobisminol mass while they are on the sea and get an injection of mapharsen and bismuth subsalicylate once on their return, rather than giving them three times during a week.

This therapy might then be kept up for a year after the serologic tests have become negative and provided the lumbar puncture examination is also negative.

With latent syphilis, the patient may be given an injection of mapharsen 60 mg. intravenously and an intramuscular injection of bismuth subsalicylate 2 cc. of the 10 per cent suspension in oil and be asked to use 2 capsules of sobisminol mass three times a day for the three weeks that he is at sea. Each time that he returns he might receive an injection of mapharsen intravenously and of the bismuth subsalicylate intramuscularly.

This therapy could be kept up for a period of eighteen months, following which he could be given two courses of four months each twice a year for the succeeding two years.

Sobisminol mass is an expensive preparation, and a certain number of persons have some gastric discomfort from it. However, if it is taken in the middle of the forenoon, middle of the afternoon and about 8 o'clock at night with plenty of water, the average person will have no difficulty. The urine of these patients should be checked from time to time to indicate whether there is any evidence of irritation of the kidneys.

POSTANESTHETIC ALOPECIA

To the Editor:—Some women who have had anesthesia for an operation or at the time of delivery frequently remark "I can't do a thing with my hair since I took ether." Others state that their hairdressers refuse to give them permanent waves because they had recently had anesthesia. Still others state that their hair has fallen out excessively after anesthesia. What is the explanation for the unruliness and falling of the hair? Is the anesthetic directly responsible or is there a metabolic disturbance associated with pregnancy or illness which is responsible? If the anesthetic is responsible, is there any difference in the effects of ether, ethylene and cyclopropane on the hair?

M.D., Florida.

ANSWER.—Perhaps ether anesthesia can cause a change in the hair of some persons, especially women, for they are much more susceptible than men to such influences on hair growth. Aside from pregnancy, which is one of the commonest causes of temporary symptomatic alopecia, other well known etiologic factors, such as influenza, typhoid and other febrile diseases and surgical operations, cause it in more women than men. However, in ascribing blame for the alopecia one should not dwell on the anesthetic when anesthesia has been occasioned by pregnancy or by an operation, for the relation of these factors to loss of hair is well established and at present there is no proof that changes in the hair have been caused by ether anesthesia or by any other form of anesthesia.

The loss of hair comes on from one to six months, most often two to three months, after the causal event; so the alopecia should not be ascribed to a recent event. Beau's lines, furrows across the finger or toe nails, may appear at the same time, additional evidence of the disturbance of circulation or of metabolism causing the alopecia.

SCARLET FEVER IMMUNIZATION

To the Editor:—What is the present status of scarlet fever immunization for exposed persons and for routine immunization for the preschool child? If the prophylactic dose of serum is used on exposed persons, how long does the immunization persist?

J. Leland Fox, M.D., Seaford, Del.

ANSWER.—Passive immunization against scarlet fever has not yielded consistently satisfactory results. Though antitoxin appears to be effective as far as protection against toxic effects are concerned, its use has not been very general, since it may produce serum reactions as uncomfortable as a mild form of the disease and frequently leaves the child sensitive to horse serum. Convalescent serum is free of these objections, but the data as to its effectiveness against anything other than the toxemia of the disease are not conclusive.

It would appear that active immunization against the toxic elements of scarlet fever is effective. The injections are attended with somewhat more uncomfortable reactions than following diphtheria immunization. While toxin immunization gives a high level of protection against clinically recognizable scarlet fever, there is no good evidence that the immunization gives equal protection against the infectious component.

No program of immunization thus far has been carried on long enough and on a sufficiently extensive scale to yield satisfactory evidence as to the value of the procedure for routine use in the preschool child.

It is presumed that the prophylactic dose of serum may produce immunity for as long as two to four weeks.

THERAPY OF GLIOMA OF THE BRAIN

To the Editor:—A woman with an infiltrative gliomatous brain tumor of the parietotemporal region was operated on approximately two months ago. The tumor was only subtotally removed, and immediately after the operation residual tissue was treated by intensive radiotherapy, but to no avail, as the tumor has recurred. Is any experience with Coley's fluid in a similar situation familiar to you? What is the status of injectable radioactive liquids, and where can they be obtained?

M.D., New Jersey.

ANSWER.—Up to the present nothing has been found to replace surgical intervention in the treatment of brain tumors. High voltage roentgen therapy may give temporary relief to the patient whose infiltrative gliomatous tumor cannot be completely removed surgically. Intensive and repeated doses are, however, necessary. Results depend on the histologic nature of the glioma. Glioblastoma, which is the most frequently encountered glioma, is only moderately sensitive to irradiation; other types of glioma do not respond at all. Direct irradiation or the insertion of filtered radium applicators into the tumor has not as yet demonstrated any superiority over therapy administered through the normal surface tissues.

Radioactive liquids, such as thorotrast (thorium dioxide), are useful as a diagnostic procedure; they have, however, no therapeutic value, as they do not leave the blood stream. Intravenous injections of radon produce extensive destruction of leukocytes, even complete aleukia, and have no effect on malignant tumors. Experience with Coley's fluid and reports as to its usefulness in the treatment of intracranial neoplasms are not available.

TETRYL AND LEAD AZIDE POISONING

To the Editor:—Several patients employed in a local munitions plant, most of them women, have duties involving the handling of "tetrol" and lead. Soon after handling these substances, which are used in the making of bomb fuses, they have a yellowish discoloration of the skin and a few days later a small, lenticular vesicular eruption surmounting an erythematous base. Some of the workers complain of bronchial irritation. Some complain of a metallic taste of their food. Can you give me any suggestions regarding these conditions?

William J. Sigmund, M.D., Bradford, Pa.

ANSWER.—"Tetrol" is another name for "furan" or "furfuran," a relatively innocuous substance. It is not known that this material is used in fuse priming. It is assumed that the actual substances used were "tetryl" and either lead azide or lead styphnate. However, if these assumptions are in error, none of the statements which follow may be applicable. Tetryl is picrylmethylnitramine, or, for short, "nitramine." In its manufacture (not here described) several opportunities arise for poisoning, burns and dermatitis from various intermediate products. When in the dry, powder form, as well as when mixed with diluting materials, such as acacia, it is a well known cutaneous irritant and discolorer of the skin. Tetryl produces the yellow characteristic of picric acid as well as an orange staining. As described by Schwartz, the lesions are

erythematous and papular with vesication. Lesions are commoner at points of contact, including the elbow fold and neck area. Patch tests with 0.5 tetryl in alcohol may yield positive results in twelve to twenty-four hours. Exposure to tetryl is fully capable of inducing systemic disease, as best described by Noro (Untersuchungen über die Trotyl-, Tetryl- und Knallquecksilber-vergiftungen bei den Arbeitern der Munitionsfabriken Finlands, reviewed in THE JOURNAL, Dec. 13, 1941, page 2109). Exposure both to lead azide and to lead styphnate may lead to systemic disease as well as to dermatitis. The dermatitis from the azide is rare but possibly more severe than that from the styphnate. The styphnate has the property of turning the skin and hair yellow. Among the three substances mentioned probably may be found the cause of the dermatitis mentioned in the query and of the other manifestations, such as the metallic taste. The exposure should be brought promptly to the attention of whatever military agency is concerned with this enterprise and in addition to the attention of the state department of health.

FRIEDREICH'S ATAXIA

To the Editor:—**Your explanation of the inheritance of Friedreich's ataxia in The Journal, February 28, page 770, seems to me to be a bit queer, because you say if "the disease is dominant or recessive on a simple mendelian basis, it would be transmitted to the next generation in at least a proportion of three to one." This would be true only if the trait was dominant and the afflicted brother and sister married each other or married partners with the disease. In the case of rare dominant traits, those afflicted are heterozygous and the expectation is that half their children will inherit and show the trait. If the disease is recessive in this brother and sister they are both homozygous, and if they married normal partners all their children would inherit the trait, but none would show it.**

William Allan, M.D.,
Bowman Gray School of Medicine, Winston-Salem, N. C.

COMMENT.—Russell Brain too found it difficult to explain the inheritance of hereditary ataxia in all cases on a simple dominant or recessive. He suggested that the disease "depends on the coexistence in the germinal material of two factors, one of which behaves as a dominant and the other as a recessive. In order to manifest the disease an individual may be either homozygous or heterozygous for the dominant factor but must be homozygous for the recessive. It is further assumed that the dominant factor is a mutant arising in the affected family, while the recessive factor, which by itself even in homozygous individuals does not cause the disease, is relatively common in the general population. This hypothesis explains the transmission of the disorder through normal individuals, who carry the dominant but are heterozygous for the recessive factor, and also its occurrence in the offspring of marriages of members of an affected family with members of a population in which the disease is rare. It is further supported by the proportion of affected offspring derived from the marriages of affected and form those of normal members of families in which the disease has appeared. No other hypothesis appears capable of affording a satisfactory explanation of the peculiarities of the inheritance of this disorder on mendelian lines. The only alternative is to assume that the disease is transmitted as a mendelian dominant but that its manifestation may be suppressed in certain cases by some unknown environmental factor. (Brain, W. R.: Hereditary Nervous Disorders, *The Chances of Morbid Inheritance*, edited by C. P. Blacker, Baltimore; William Wood & Co., 1934, p. 48).

Finally, even as Dr. Allan has pointed out, the trait may be inherited without clinical signs; is it therefore wise for the brother or sister to marry? The answer in all instances should be no.

VIRUSES IN DRINKING WATER

To the Editor:—**Is there any way to test drinking water for viruses?**

J. A. Schurgot, M.D., Grafton, Ohio.

ANSWER.—As far as is known, but few virus diseases are spread by means of water. There are two possible exceptions, namely poliomyelitis and swimming pool conjunctivitis. The virus of poliomyelitis has been found in human feces and sewage. At least one worker, Kling, has reported finding the virus in drinking water (In Search of Poliomyelitis Virus in Drinking Water, *Internat. Bull. Econ. M. Research & Pub. Hyg.* **A 40**:161, 1939), but this observation needs confirmation. There are definite ways of detecting viruses in water, for instance the injection of the unaltered water or concentrated water into animals susceptible to the virus suspected of being present. If the water is highly contaminated with bacteria they can be removed by filtration without appreciably interfering with tests for viruses. Workers making such tests must be thoroughly familiar with viruses and the methods of detecting and handling them.

REFRACTORY GONOCOCCIC INFECTION

To the Editor:—**On Feb. 2, 1942 a woman aged 26, presented herself at the office because of profuse purulent vaginal discharge. Bacteriologic examination of urethral and vaginal smears disclosed innumerable pus cells loaded with streptococci, staphylococci and a moderate number of intracellular gram-negative diplococci. Cervical smears contained only mucus. Sulfathiazole 30 grains (2 Gm.) daily for ten days and 45 grains (3 Gm.) daily for another two days was given. Local treatment consisted of estrone suppositories 2,000 units daily. The latter were administered with a view to the vulvovaginal type of the disease and the infantile appearance of the genitalia. Sulfathiazole was apparently well tolerated at first under steady control of the blood status, but on the thirteenth day a severe drug rash with fever occurred. On the twentieth day the discharge was mucus only, and neither pus cells nor organisms of any kind could be found in the smears. Now mixed vaccine for gonococci, streptococci and staphylococci was administered in two doses of 0.1 and 0.2 cc. subcutaneously on the twenty-eighth and thirty-third day respectively. There was no reaction on the first injection, but two days after the second injection the discharge suddenly reappeared and the smears are now loaded with gram-negative diplococci. Streptococci and staphylococci are no longer visible. I initiated a course of sulfadiazine but am skeptical of the outcome. What more can be done if the effect of sulfadiazine is insufficient or if there is another relapse? Would artificial fever give better chances, and if so in what form? The boy friend is being treated elsewhere for chronic gonorrhea. I am fairly sure that there has been no intercourse since February 2. I would appreciate whatever advice you might be able to give and also your opinion as to whether it was unwise to administer the vaccine at that stage.**

M.D., Massachusetts.

ANSWER.—In event of the sulfadiazine therapy failing to effect a clinical and bacteriologic cure, it is suggested that, after a rest period of approximately two weeks, the patient be treated by the combined sulfathiazole and artificial fever method as outlined by Simpson (*Brit. J. Ven. Dis.* **17**:185 [July-Oct.] 1941. A similar article by the same authors appeared in *War Medicine* **1**:470 [July] 1941).

LUMPY BREAST

To the Editor:—**Kindly advise as to the diagnosis and therapy of the breast of a 25 year old multipara who eighteen months post partum began to have an aching and lumps in both breasts with the secretion of a watery milky solution. The breasts contain a few small hard lumps which on pressure are slightly tender, and there is retraction of the left nipple as a consequence of its attachment to the area of mastitis.**

M.D., Manitowoc, Wis.

ANSWER.—The age is against cancer, but this diagnosis cannot be excluded on the basis of age. The presence of multiple tumors is evidence against cancer, but the retraction of the nipple favors the diagnosis of cancer. Congenital retraction of the nipple has to be excluded in this case. If the retraction of the nipple is not congenital and is a consequence of attachment of the tumor to the skin, cancer has to be excluded by biopsy and frozen section. The interpretation of conditions of this type is exceedingly difficult even after careful examination of the patient. Consultation with some one experienced in this clinical condition is required in this case.

CHLORINATING WATER

To the Editor:—**What is a practical method of chlorinating water for a camp on a lake to make it potable?**

Robert E. Cloud, M.D., Ensley, Birmingham, Ala.

ANSWER.—There are several reliable manufacturers of chlorinating equipment for small camp water supplies using calcium or sodium hypochlorite solutions as the disinfecting agent. The type of installation will depend on the type and size of the water system involved. The equipment applies the hypochlorite solution in prescribed quantities in proportion to the pumpage or flow of the water in the local system. The appliances may be operated either manually or automatically, the latter being somewhat more expensive. In the water works trade, appliances of this kind are known as hypochlorinators.

HEREDITARY TRANSMISSION OF ALLERGY

To the Editor:—**A woman who suffers from hay fever and whose husband has the same type of hay fever is very desirous of having children. She would like to know what the probabilities are for her children to have hay fever, eczema or other forms of allergy.**

M.D., Ohio.

ANSWER.—When both parents have major allergy such as described here, statistics indicate that from 65 to 70 per cent of the offspring will have some form of allergy. In the instance cited in the query, children may, of course, have other allergic manifestations such as asthma or eczema in addition to the probability of hay fever.